



# **BIO130H1S**

## **Course Syllabus - 2025**

### **Course Address**

University of Toronto  
Department of Cell and Systems Biology, University of Toronto  
Ramsay Wright Labs, 25 Harbord Street  
Toronto, Ontario  
M5S 3G5

### **Course Requirements**

#### **Pre-requisites:**

SBI4U and SCH4U (Grade 12 University Preparation Biology and Chemistry) or permission of the course coordinator. Please e-mail [bio130@utoronto.ca](mailto:bio130@utoronto.ca) for more information.

**Exclusion:** BIOA01H3, BIO152H5

### **Lecture Location & Hours**

#### Day Section

Mondays 10:00am -11:00am and Thursdays 10:00am – 12:00pm, Convocation Hall.

#### Evening Section

Thursdays 6:00pm - 9:00pm, MacLeod Auditorium (MS 2158)

### **Required Course Material**

1. Textbook: Essential Cell Biology. 6<sup>th</sup> Edition. 2023. Alberts B, Heald R, Hopkin K, Johnson A, Morgan D, Roberts K, and Walter P. WW Norton and Company.
2. Course announcements posted on this website. These are updated regularly. It is the responsibility of all students to read course announcements.
3. Manual: BIO130 Molecular and Cell Biology Lab Manual – 2025. Available at the University of Toronto Bookstore
4. Lab coat, Safety Glasses/ goggles are Required by Health and Safety regulations for all wet labs. Students will be denied access and forfeit credit for the lab if they are not wearing a lab coat and safety glasses/goggles.



## Evaluation

<b>71% Lectures</b>	30 %	Midterm Exam * (February 28th) covering Section 1 Lectures
	35 %	Final Exam (April Exam Period) covering Section 2 Lectures and Labs
	4%	Textbook Reading Quizzes**
	2%	Team Up! Active Learning Participation***
<b>29% Labs</b>	9%	Lab Quizzes****
	16%	Lab Assignments*****
	4%	Library Assignment

The final mark will be primarily based on one Midterm Exam and one Final Exam. Both exams are in-person.

\*The Midterm Exam is currently scheduled for February 28th, 2025, between 4 - 6 PM. Any change will be communicated via the Announcements on Quercus.

### Missed Midterm

Students who miss the midterm must follow the instructions on Quercus for Missed Midterm, fill out the Missed Midterm Form and submit it with a valid [documentation](#).

\*\* If you complete 8 out of 11 Textbook Reading Quizzes with a perfect score by the deadline, you automatically earn 4%. Each of your 8 perfect quizzes is worth 0.5%. Fewer than 8 perfect quizzes will result in a corresponding portion of 4%. Please see the Textbook Reading Quizzes Schedule posted under “Start Here” module.

\*\*\* If you participate in 4 out of 6 Team Up! Quizzes you will earn 2%. Each time you participate earns you 0.50%. Fewer than 4 participations will result in a corresponding portion of 2%. Team Up! quizzes will be released during the lecture on Thursdays and will remain open till Sunday at 11:59 PM.

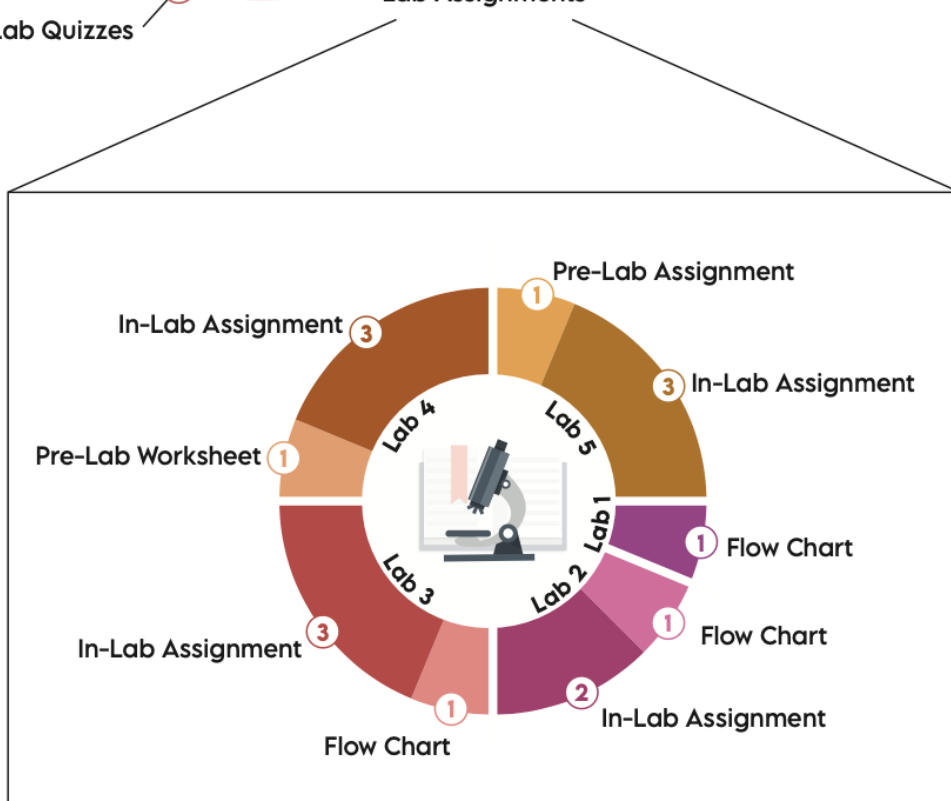
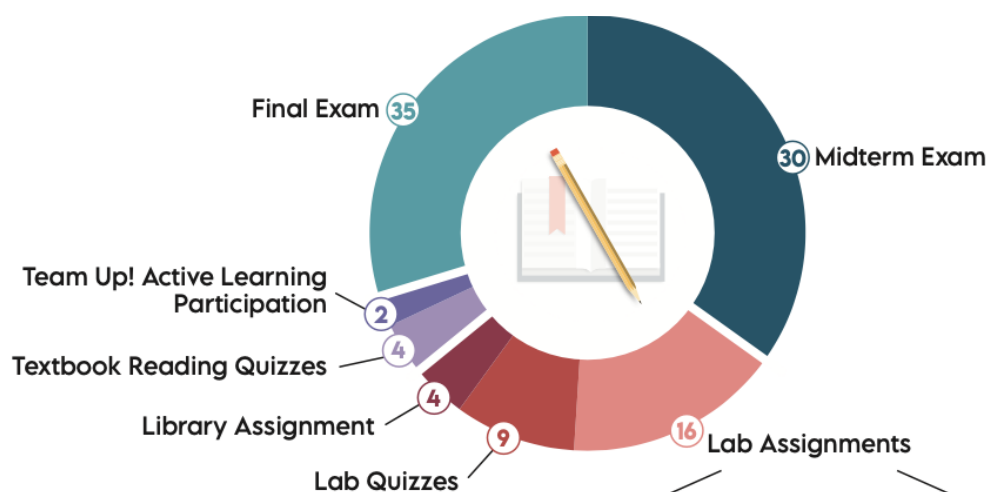
\*\*\*\*The 3 best out of 4 lab quizzes will correspond to a portion of 9%. Each quiz is worth 3%. Lab quizzes are closed book, independent work and take place during the lab.

\*\*\*\*\*Lab Assignments:

1% <b>Lab 1</b>	1% Flow Chart
3% <b>Lab 2</b>	1% Flow Chart
	2% In-Lab Assignment
4% <b>Lab 3</b>	1% Flow Chart
	3% In-Lab Assignment
4% <b>Lab 4</b>	1% Pre-Lab Worksheet
	3% In-Lab Assignment
4% <b>Lab 5</b>	1% Pre-Lab Assignment
	3% In-Lab Assignment



## BIO130H1S – 2025 Evaluation





## Lecture Syllabus

### Section 1 The Building Blocks of Life

Prof. M. Neumann (Team Leader), Department of Cell and Systems Biology

#### Lectures 1 - 4

- Introduction to Cell and Molecular Biology
- Cellular Diversity
- Prokaryotes and Eukaryotes
- The Molecules of Life and Their Chemistry
- DNA, RNA, and Proteins
- Introduction to Genomes

#### Lectures 5 - 8

- Nuclear and Organellar Genomes
- Chromosomes and chromatin
- DNA replication and repair
- Introduction to transcription

#### Lectures 9 & 10

- Transcription
- RNA processing

#### Lectures 11 & 12

- Translation
- Protein Folding
- Antibiotics

### Section 2 Cellular Form and Function

Prof. D. Goring, Department of Cell and Systems Biology

#### Lectures 1 - 4

- Cellular membranes
- Membrane proteins
- Transport across membranes

#### Lectures 5 & 6

- Intracellular compartments
- Protein sorting



### Lectures 7 & 8

- The cytoskeleton
- Filament assembly and dynamics
- Motor proteins

### Lectures 9&10

- Interactions between cells and their environment
- Cell junctions and adhesion
- Extracellular matrix

### Lectures 11&12

- The cell cycle
- Interphase and M phase
- The role of the cytoskeleton in M phase

## Lab Syllabus

- Lab 1: Learning to Work like a Molecular Biologist I  
DNA Isolation and Electrophoresis
- Lab 2: Learning to Work like a Molecular Biologist II  
PCR and Bioinformatics
- Lab 3: Learning to Work like a Molecular Biologist III  
Restriction Enzymes and Cloning
- Lab 4: Learning to Work like a Cell Biologist I  
Cells and Microscopy – *Paramecium* - Locomotion and Feeding Behaviour
- Lab 5: Learning to Work like a Cell Biologist II  
Cells and Microscopy – *Chlamydomonas* - Microtubule Dynamics

## Lab Policy

Labs are held on alternate weeks. In-person labs are held in the Department of Cell and Systems Biology, Ramsay Wright Building (RW), 25 Harbord Street.

### Group Assignments:

You can check your assigned lab group on Quercus under “Groups” on the left-hand side.

Cycle 1 labs (labs with code Pxx01) start the week of **January 13th**.

Cycle 2 labs (labs with code Pxx02) start the week of **January 20th**.

Labs are every other week. See below for specific dates for each cycle.

**Arrive on time for your lab:**

Labs start promptly at 10 minutes past the hour (9:10, 1:10, 5:10, 6:10). If you arrive late, you will still be expected to finish the lab within the assigned time, with no compensation if you cannot. If you have missed too much of the lab, you may not be able to do the lab for credit.

**Lab work:**

The Library Assignment and all five labs will include instructions on quizzes and assignments submission. It is your responsibility to read and follow those instructions.

**Finish on time:**

The labs are designed to be completed within the scheduled time. Students will be asked to leave by the end of this time.

**Safety:**

Lab coat and Safety Glasses/goggles are required by Health and Safety regulations for all in-person labs. You will be denied access and forfeit credit for the lab if you are not wearing a lab coat and safety glasses/goggles.

**Lab changes:**

You must attend the first lab as scheduled. Lab enrolment period on ACORN ends on January 9<sup>th</sup> by 9 AM. After that, lab change/enrolment requests must be submitted through the Lab Change Request Form found on Quercus, under Labs module. No change request will be accepted after Jan 16<sup>th</sup>.

**Missed labs:**

If you miss a Lab and you have a valid [documentation](#) for us, we will approve you to sit in with another Lab if space in that section permits. Specific instructions are given below. If this is not possible, the marks associated with that Lab will be reapportioned to the Final Exam. Lab work is an integral part of this course and of a science education, thus we will limit the number of missed labs to a maximum of one for this course.

**Contact the BIO130 Office as soon as you miss a Lab (or before if possible) with the required documentation attached. Email inquiries must be professional and done within one week (7 days) of missing the lab.** Late requests or emails that have no required documentation attached will not be processed. Serious and extended illness affecting two consecutive Labs or more will be considered on an individual basis.

**Late submissions:**

If the Library Assignment is submitted late, the assignment will be penalized 10% of the total value of the assignment per day. Assignments more than 48 hours late will not be accepted without a valid [documentation](#).



### **Confirm your marks regularly (IMPORTANT!):**

Lab TAs will enter marks after each lab. It is your responsibility to check your marks every other week and report any errors or missing marks to your TA immediately (see below).

### **Mark enquiries:**

Mark errors or concerns need to be dealt with as close to the event as possible. University policy states that enquiries need to be made within two weeks of the return date of the work. Late enquiries cannot be accommodated. Please deal with mark enquiries promptly.

### **Health and well-being**

Your health and well-being in this course are important to everyone – from the instructors, TAs, administrative staff and the University of Toronto as a whole. The following are suggestions and resources to make sure you have a productive and healthy semester. The university experience can be a challenging one, there is no need to go about it alone. If you or anyone you know could use someone to talk to (or text with), here are some resources in addition to your instructors, program coordinators, and TAs:

- Your College Registrar: [uoft.me/registrars](https://uoft.me/registrars)
- UofT Health and Wellness: 700 Bay Street Toronto, ON M5G 1Z6  
416-978-8030 | [info.hwc@utoronto.ca](mailto:info.hwc@utoronto.ca)

### **24/7 emergency counselling services:**

- [U of T My Student Support Program](#) (My SSP) | 1-844-451-9700.
- Outside of North America, call 001-416-380-6578.  
Culturally-competent mental health and counselling services in 146 languages for all U of T students.
- [Good2Talk Student Helpline](#) | 1-866-925-5454  
Professional counseling, information and referrals helpline for mental health, addictions and students' well-being.

### **Acorn Absence Declaration:**

You can use the [Absence Declaration tool on ACORN](#) to record any absence from academic work, whether for medical or non-medical reasons (e.g., COVID, cold, flu, and other illnesses, injuries or family situations). You may declare one absence per session (i.e., once in the Winter). The Absence Declaration tool can be used to declare an absence up to seven consecutive days in the current session. The date range must include the day you declare your absence. Please note that you remain responsible for meeting the course requirements. In certain cases, you will need to submit a [U of T Verification of Student Illness or Injury form \(VOI\)](#) (see page 8).



**For longer term illness:** For absences that extend beyond the Absence Declaration time limit (seven days), you will need to submit the VOI form.

The VOI must be completed by a medical practitioner and must include the day(s) of your illness or injury. Please reach out and speak to your [College Registrar's Office](#) if you need help submitting a VOI.

## Academic Integrity

“Academic integrity is a foundation of our university community’s intellectual life.

What does it mean to act with academic integrity?

Acting with academic integrity means not ‘cheating’ to get ahead. U of T supports the International Center for Academic Integrity’s definition of academic integrity as acting with honesty, trust, fairness, respect, responsibility, and courage in all academic matters.”

<https://www.academicintegrity.utoronto.ca/>

“The University of Toronto treats cases of academic misconduct very seriously. Academic integrity is a fundamental value of learning and scholarship at the U of T. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that your U of T degree is valued and respected as a true signifier of your individual academic achievement.

The University of Toronto’s [Code of Behaviour on Academic Matters](#) outlines the behaviours that constitute academic misconduct, the processes for addressing academic offences, and the penalties that may be imposed. You are expected to be familiar with the contents of this document. Potential offences include, but are not limited to:

### In lab work and assignments:

- using someone else’s ideas or words without appropriate acknowledgement
- submitting your own work in more than one course without the permission of the instructor
- making up sources or facts
- obtaining or providing unauthorized assistance on any assignment (this includes working in groups on assignments that are supposed to be individual work)

Some lab work in BIO130 is group work (e.g. in-class lab assignments), and therefore you are expected and encouraged to collaborate, but anything that you submit as an individual student should be understood to be your own work. Please be sure you understand this and if in doubt about whether something is individual work or group work, please speak with your TA or post the question on the Lab discussion board on Quercus. It is always better to ask first if in doubt!

**Note** that if you have previously taken BIO130H1, you must not re-submit the same work, even if you did not receive a grade or feedback.



**On tests and exams:**

- using or possessing any unauthorized aid, including a cell phone
- looking at someone else's answers
- letting someone else look at your answers
- misrepresenting your identity
- submitting an altered test for re-grading

**Misrepresentation:**

- falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.
- falsifying institutional documents or grades.

**Generative AI:**

It is not required to complete any coursework, and we caution you to not rely on those tools to complete your coursework. Instead, you can treat generative AI as a supplementary tool for exploration and for gathering information from across sources and assimilating for understanding. The final submitted assignment must be original work produced by the individual student alone. Ultimately, you (and not any AI tool) are responsible for your own learning in this course, and for all the work you submit for credit. It is your responsibility to critically evaluate the content generated, and to regularly assess your own learning independent of any generative AI tools. Over reliance on generative AI may give you a false sense of how much you have learned, which can lead to poor performance on assignments and exams, or in future work/study after graduation.

All suspected cases of academic misconduct will be investigated following the procedures outlined in the [Code of Behaviour on Academic Matters](#). If you have any questions about what is or is not permitted in this course, please do not hesitate to contact our office. If you have questions about appropriate research and citation methods, you are expected to seek out additional information from me or other available campus resources like the [College Writing Centres](#), the [Academic Success Centre](#), or the [U of T Writing Website](#)."

**Avoiding Plagiarism:**

<https://advice.writing.utoronto.ca/using-sources/how-not-to-plagiarize/>



## Accommodations

### Students with Disabilities:

“Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability or health consideration that may require accommodations, please feel free to approach me and/or the Accessibility Services Office as soon as possible. The Accessibility Services staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let them and us know your needs, the quicker we can assist you in achieving your learning goals in this course.”

### Accessibility Services:

[accessibility.services@utoronto.ca](mailto:accessibility.services@utoronto.ca)

<https://studentlife.utoronto.ca/departments/accessibility-services/>

### Religious Observances:

The University provides reasonable accommodation of the needs of students who observe religious holy days other than those already accommodated by ordinary scheduling and statutory holidays. Students have a responsibility to alert members of the teaching staff in a timely fashion to upcoming religious observances and anticipated absences and instructors will make every reasonable effort to avoid scheduling tests, examinations or other compulsory activities at these times.

Please contact the Multifaith Centre as soon as you can, requesting them to inform the the BIO130 office about any expected absences due to religious practices. Additionally, discuss with them any potential effects these absences might have on your coursework.

Religious Accommodation Support:

<https://studentlife.utoronto.ca/service/religious-accommodation-support/>

### Family Care Responsibilities:

“The University of Toronto strives to provide a family-friendly environment. You may wish to inform the BIO130 office if you are a student with family responsibilities. If you are a student parent or have family responsibilities, you also may wish to visit the Family Care Office website at [familycare.utoronto.ca](http://familycare.utoronto.ca).”

## Equity, Diversity and Inclusion

“The University of Toronto is committed to equity, human rights, and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another’s differences. U of T does not condone discrimination or harassment against any persons or communities.”

<https://people.utoronto.ca>