

Biology 2382A – Cell Biology

Course Outline

1. Course Information:

Biology 2382A – Cell Biology; Summer Distance, 2026

Content: This course, including all testing, is completed asynchronously and entirely online. The course content consists of recorded lectures and tutorials that were made during the regular course offering.

Prerequisites: A minimum mark of 60% in either Biology 1001A or 1201A and a minimum mark of 60% in either Biology 1002B or 1202B; Chemistry 1301A/B and 1302A/B or the former Chemistry 1100A/B and 1200B. Unless you have either the requisites for this course or written special permission from your Dean’s Designate (Departmental or Science Academic Advisors) to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to fees in the event that you are dropped from a course for failing to have the prerequisites.

2. Instructor Information & Email Policy:

Instructors	Email	Office	Phone	Office Hours
Dr. Joshua Pemberton (Course Coordinator)	joshua.pemberton@uwo.ca	BGSB 3030	519-661-2111 x 83131	By appointment only.
Olaide Ajibola (Teaching Assistant)	oajibol3@uwo.ca	N/A	N/A	Virtual Office Hours

Students must use their Western (@uwo.ca) email addresses in all communications with the instructor and include “**Bio2382A**” in the subject line. While emergency situations will be dealt with as quickly as possible, a reminder that responses to emails will occur during regular business hours – typically within 12-24 hrs. The format for scheduled discussions of the coursework are virtual meetings that will be hosted on Zoom through Western Technology Services (<https://wts.uwo.ca/zoom/index.html>). Note that course content-related questions are dealt with through the virtual office hours or online discussion forums. Email should be directed to the Course Coordinator only for questions that are specific to you.

3. Course Syllabus, Schedule, & Delivery Mode:

Biology 2382A will provide registrants with a contemporary overview of eukaryotic cell biology, including the basics of cell division, apoptosis, membrane trafficking, protein sorting, cytoskeletal organization, and molecular quality control. The course will not only focus on mechanistic aspects of these

processes, but will also discuss the technologies and experimental approaches that ultimately facilitate modern cell biology research. Overall, the course is organized into seven major themes:

Theme 1: Cell Theory, Cell Culturing, & Microscopy

Theme 2: Protein Sorting, Targeting, & Secretion

Theme 3: Membranes, Membrane Proteins, & Membrane Transport

Theme 4: Cystic Fibrosis

Theme 5: The Cytoskeleton

Theme 6: Signal Transduction

Theme 7: The Cell Cycle & Apoptosis

Broad Course-Level Learning Outcomes:

By the end of this course, students should be able to:

1. Distinguish between various cell types and their characteristics when grown in culture.
2. Recognize the appropriate forms of microscopy for visualizing cellular structures and proteins and understand various techniques for isolating and analyzing organelles and proteins.
3. Be able to describe the processes involved in the controlled movement of proteins from the inside to outside of the cell and vice versa.
4. Outline all the steps and regulatory mechanisms involved in ensuring the controlled division of cells.
5. Understand the structure and functions of the three cytoskeletal networks (microfilament, intermediate filaments, microtubules).
6. Be able to explain how the cytoskeleton plays a role in major cellular processes (migration, adhesion, division, organelle trafficking).
7. Be able to describe the major components of the plasma membrane and how they impact overall membrane function.
8. Explain the role of membrane proteins in transport and signalling.
9. Explain how signals from outside of the cell are transmitted to trigger changes within the cell.

4. Course Materials

All course material is copywritten and cannot be shared.

The lectures and tutorials are both provided in the format of video recordings. Most of these were made during the regular offering of the BIO2383B course in the Winter term of 2020, with newer Tutorials introduced to the coursework in the Winter term of 2025. The main course lectures were given by *Drs. Robert Cumming* and *Sashko Damjanovski*, while the tutorials were prepared by *Dr. Pemberton*. In general, the tutorials are meant to provide added detail and context to help you understand the most fundamental concepts in cell biology and will have some overlap with the main lecture contents. Note the tutorial materials are purposely provided as videos only, so you must prepare your own study notes.

In terms of source materials, as the video lectures represent the bulk of the course content, and the exam questions will reflect this. Importantly, while the tutorial content does overlap and support the lecture materials presented in many of the defined Themes, the supplementary information covered exclusively in the tutorials will not be on either the Midterm or Final exams. Assessments related to the tutorial content will be covered by the three asynchronous Quizzes.

Course materials will be posted to OWL: <https://westernu.brightspace.com/>. Students are responsible for checking the course OWL site regularly for news and updates. This is the primary method by which

information will be disseminated to all students in the class. If students need assistance with the course OWL site, they can seek support on the [OWL Brightspace Help](#) page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800. Students are expected to follow online etiquette expectations provided on OWL. All course materials created by the instructor(s) are copyrighted and cannot be sold/shared. Recordings (audio or video) are not permitted without explicit permission and any permitted recordings are not to be distributed.

Technical Requirements

This course involves access to online resources and will require students to have access to a computer and stable internet connection. Additionally, if a student requests a virtual meeting, a webcam and working microphone are also required.

Textbook

The textbook required for this course is **Molecular Cell Biology**, 9th Edition, by *H. Lodish*, et al., (W.H. Freeman & Co.). Availability is managed by the *Dellelce Family Bookstore*, with two purchase options:

1. "Molecular Cell Biology eBook & Achieve 150 Day Rental".
2. "Molecular Cell Biology Looseleaf with Achieve 150".

5. Methods of Evaluation

Grading Scheme and Assessment Dates:

Assessments will be formatted as multiple choice, with the course grade calculated as listed below:

Tutorial Quizzes (Asynchronous)		20%
Quiz #1 – Based on Tutorials #1 & #2	~ 6.7%	
Quiz #2 – Based on Tutorials #3 & #4	~ 6.7%	
Quiz #3 – Based on Tutorials #5 & #6	~ 6.7%	
Midterm Exam (48 hr Assessment Window; May 25th-26th)		35%
Covers materials presented in <u>Themes 1-4</u> .		
Final Exam (48 hr Assessment Window; June 13th-14th)		45%
<u>Cumulative</u> , but weighted towards the materials covered in Themes 5-7.		

Quizzes and examinations in this course will be conducted using Proctortrack. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide personal information, including some biometric data, and the session will be recorded. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. Information about the technical requirements for accessing Proctortrack are available at the following link: <https://www.proctortrack.com/tech-requirements/>.

All assessments are to be written individually, closed book, with no aids. Although we acknowledge that the majority of students are not tempted to engage in cheating, we are nonetheless required to monitor for cheating to maintain the integrity of the marks in the course. We will monitor these tests for cheating and will collect evidence of cheating to pursue an accusation of **Academic Misconduct**, should the case arise. Remember that cheating is an academic offence that can lead to expulsion from the university. Also, professional schools often ask you to release your Western academic file upon applying. Although some students may find cheating a tempting option, the downsides of cheating outweigh any benefits.

You also do not have the right to photograph, screen share, or copy any portion of the online exams or quizzes. Uploading any part of the quizzes or test questions to an online site or service where others may access it is a **Scholastic Offense** and will be pursued as such. Similarly, unauthorized possession of a copy of an open Exam or Quiz is also considered a **Scholastic Offense**, unless the student reports the matter to the instructor, department, or registrar as soon as possible after receiving it.

Grade Adjustment Requests:

We do not consider requests for grade adjustments based on you not meeting a threshold mark that affects your GPA, module requirement, pass/fail, funding cutoffs, or other grade-associated issues. To be fair to everyone, we can only mark you based on the merit of your performance in the course assessments. We do not offer alternative/extra assessments beyond those provided to all students in the class. Following university senate guidelines, Final Grades with decimals of 0.45 or higher will be rounded up to the nearest full integer. Anything below 0.45 is rounded down.

General Information About Missed Coursework:

Students must familiarize themselves with the *University Policy on Academic Consideration – Undergraduate Students in First Entry Programs* posted on the Academic Calendar:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf,

This policy does not apply to requests for Academic Consideration submitted for **attempted or completed work**, whether online or in person. The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult [Accessible Education](#).

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage: https://registrar.uwo.ca/academics/academic_considerations/.

All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline and must include supporting documentation. Recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request without supporting documentation in this course. However, the following assessments are excluded from this, and therefore always require formal supporting documentation: **examinations scheduled during official exam periods** (defined by policy). When a student *mistakenly* submits their one allowed Academic Consideration request without supporting documentation for the assessments listed above or those in the Coursework with Assessment Flexibility section below, the request cannot be recalled and reapplied. This privilege is forfeited.

Evaluation Scheme for Missed Assessments:

Failure to attempt a Tutorial Quiz within the availability window does not require Academic Consideration and the value of the quiz will be automatically be re-weighted to the Final Exam. Missing the Midterm Exam requires Academic Consideration for the entire availability window. Then your Midterm Exam grade will be re-weighted to the Final Exam. Note, there are no makeups because of the condensed format of the course. When a student misses the Final Exam and their Academic Consideration has been granted, they will be allowed to write the Special Examination (the name given by the University to a makeup Final Exam). See the Academic Calendar for details (under Special Examinations), especially for those who miss multiple final exams within one examination period.

6. Additional Statements

Religious Accommodation

When conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request an accommodation for their absence in writing to the course instructor and/or the Academic Advising office of their Faculty of Registration. This notice should be made as early as possible but not later than two weeks prior to the writing or the examination (or one week prior to the writing of the test). Please visit the Diversity Calendars posted on our university's EDID website for the recognized religious holidays: <https://www.edi.uwo.ca>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf.

Academic Policies

The website for Registrar Services is <https://www.registrar.uwo.ca/>.

In accordance with policy, https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

Support Services

Please visit the Science & Basic Medical Sciences Academic Advising webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic-related matters: <https://www.uwo.ca/sci/advising/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at: http://academicsupport.uwo.ca/accessible_education/index.html.

Learning-skills counsellors at Learning Development and Success (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.