

Biology department
Cell Biology Bio2382b 2022

This one-page course overview has been created to communicate expectations for many courses to help you plan your semesters. The complete and final details and full syllabus associated with this specific course is below.

Instructor/coordinator: Dr. Sashko Damjanovski

Email: sdamjano@uwo.ca

Instructor: Dr. Robert Cumming

Email: rcummin5@uwo.ca

TAs: Ariel Frame aframe@uwo.ca and Alexandra Kozlov akozlov2@uwo.ca.

Course description

The official course description can be found in the [Academic Calendar](#). Instructors may or may not adhere to the Extra Information found in the Academic Calendar in terms of the number of lecture/tutorial/lab hours. See below for more information about course delivery mode and time estimates. These time estimates do not include assessments or independent study.

Required:



Stable internet connection



Laptop or computer



Working microphone



Working webcam

The following interfaces could be used for assessments:

Owl quizzes/tests/exams

Delivery mode:

This course will be **initially delivered online**. With the hope to transition into in-person lectures after the first few weeks. Initially virtual lectures will be asynchronous (recorded). Tutorials will be synchronous (live) via Zoom. Students may be expected to complete work prior to attending sessions. Timetabled sessions (specifics will be found in Owl) will be used for tutorials. Synchronous office hours will also be available. Below is an overview of the sessions.

Mode	Dates	Time Eastern Standard Time	Frequency*	Attendance
Virtual asynchronous lectures	N/A		Weekly	N/A
In-person lectures (hopefully sometime during term)	M/W	Sec 002 11:30 am Sec 001 1:30 pm	Weekly	required
Virtual synchronous "tutorial" meeting	TBD		Weekly*	Not mandatory
Virtual synchronous office hours	TBD		Weekly*	Not mandatory

*Detailed schedules will be posted in the course Owl website.

Assessments:

All assessments will be online through the course Owl website. Proctortrack will be used for the midterms and final exam. Quizzes, midterms, and a final exam, predominantly using multiple choice and true/false questions, will be used to assess the learning outcomes that have been set.

Bio2382b Cell Biology 2022 Syllabus

Instructor/coordinator: Dr. Sashko Damjanovski

Email: sdamjano@uwo.ca

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ALL COURSE MATERIAL related questions should be dealt with through the Owl website forums/TA or instructor ZOOM meetings. Only email Dr. Damjanovski with administrative issues. Students must use their Western (@uwo.ca) email addresses when contacting their instructors/TAs.

Unless you have either the prerequisites for this course or written special permission from your Dean 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 your fees in the event that you are dropped from a course for failing to have the necessary prerequisites. **Prerequisite(s):** Either [Biology 1001A](#) or [Biology 1201A](#) and either [Biology 1002B](#) or [Biology 1202B](#) with a minimum of 60% in each; [Chemistry 1301A/B](#) and Chemistry 1302A/B. [Integrated Science 1001X](#) with a minimum mark of 60% can be used as a prerequisite in place of [Biology 1002B](#) and [Chemistry 1302A/B](#).

Technical Requirements

As this course involves remote delivery it **REQUIRES**, a computer, a webcam, a working microphone, and a stable internet connection. The capability to run ZOOM and Proctortrack is also required.

Mode of delivery

The course will begin with online lectures. These online lectures will be asynchronous. Recorded “lectures” will be posted on Owl every week of term. (Also posted roughly every week will be teaching activities - fun exercises meant to reinforce the lecture material. These online weekly teaching activities will be maintained online even if lectures shift to in-person). Should COVID restrictions change, and lectures shift to be in-person, there will be no further online lectures.

Thus, if in-person lectures begin, you will have to come to class! (NS145).

Regardless of whether lectures are online or in person, the “tutorial” TA help sessions will always be online and “live” via Zoom. The tutorials are explained below.

Additionally, live instructor office hours will be available via Zoom (details to be posted on Owl).

ALL live Zoom meetings will be recorded!

All course material delivery and evaluation will be through OWL: <https://owl.uwo.ca>.

A reminder that material on the course Owl website is copywritten and cannot be shared!

If students need assistance, they can seek support on the [OWL Help page](#), or contact the [Western Technology Services Helpdesk](#) (or phone 519-661-3800, or ext. 83800). [Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers to optimally OWL use; [Google Chrome](#) is preferred for ProctorTrack; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](#).

Students are expected to actively engage online: attending TA “tutorial” sessions; completing teaching activities linked with learning outcomes; interacting in peer forums; and office hours with instructors.

Course Description/Overview

“Classes” begin January 10, 2022 (Lectures will be posted to Owl weekly, or delivered in person). Office hours and “tutorial” help sessions begin week of Jan 10 (“ZOOM” links in Owl site).

Spring Reading Week: Feb 21-25.

Last day to withdraw without academic penalty Mar 14.

Classes end: April 8

“Lecture” Topics (anticipated)

Introduction to Cell Biology

Technical Aspects and Approaches (i.e. Tools of the Trade)

Cell culture, Stem cells, Cancer cells, Imaging in cell biology

Isolation and analysis of cell organelle and molecules

Protein Synthesis

Organelles and transport; Vesicular Traffic—Protein sorting, Receptor-mediated

Endocytosis

The Cytoskeleton

Microtubules: Microtubule-organizing centers (MTOCs), dynamics and motor proteins,

Mitotic Apparatus and Mitosis

Intermediate Filaments

Actin and Myosin

Muscle Contraction; Cell Motility

The Cell Surface

Cell Junctions, Cell Adhesion and Extracellular Matrix

Structure and Composition of Biological Membranes

Membrane Proteins

Membrane Transport

Cell Signalling & Signal Transduction

Receptor tyrosine kinases (RTKs), G-protein-coupled receptors (GPCRs), Apoptosis,
and others

Mitosis & Molecular Regulation of the Cell Cycle

Office Hours

Instructors will be available for weekly live ZOOM office hours (50 mins).

These are scheduled for Mondays at 11:30am and Wednesdays at 1:30pm. (These times WILL change if lectures shift to in-person). ZOOM meeting links are found on the course Owl website.

Depending on demand, these times may shift, or more hours may be added. There are also limited numbers of 10 minute “private” weekly appointments – contact the instructor directly.

TAs Help/Tutorial Sessions

TAs will be available for weekly live ZOOM help sessions / question and answer periods.

These are tentatively scheduled for Tuesdays and Thursdays from 10:30am-11:20am.

Depending on demand, these times may shift, or more hours may be added.

ZOOM meetings require you to turn your camera on. We will not be talking to a blank screen.

Course Level Learning outcomes

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 component and the 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.

Textbook: (required/strongly recommended): Molecular Cell Biology, 9th Edition, by H. Lodish et al. (W.H. Freeman & Co.) Sections of the textbook relevant to course topics will be specified during lecture.

Tutorials:

There are no formal tutorials in Bio2382b. Instead TAs will be available for virtual help sessions, live via Zoom. The schedule for these sessions will be posted on Owl, with additional sessions being added closer to midterm and final exam dates. These help sessions are not a review. TAs will instead be available to answer questions regarding lecture material. No new material will be presented, nor will any grade be associated with these tutorials. While not mandatory, students are strongly encouraged to engage as needed with the TAs to reinforce their understanding of the lecture material. Students are expected to lead discussions with the TAs regarding questions they have – the TAs are not responsible for going over, reviewing, or summarizing lectures. TAs are there to answer specific questions and clarify specific misunderstandings students may have. While students are welcome to join in on these tutorial help sessions even if they do not have a question, the TAs are not obliged to lead conversations in the event that no one asks a question. All Zoom links, schedules and resources will be found within the left Tutorial button link on Owl. The tutorials will be run by the TAs (Ariel Frame iframe@uwo.ca and Alexandra Kozlov akozlov2@uwo.ca). **It is UWO policy that all academic Zoom meetings be recorded!**

Methods of Evaluation (note – dates and length of time subject to change)

“Get Started”/onboarding Quiz	- 0%		
Quiz 1 (covers week 1)	- 5%	- Jan 16	15 min
Quiz 2 (covers week 2)	- 5%	- Jan 23	15 min
Midterm 1, (covers weeks 1-4)	- 20%	- Feb 6	45 min
Quiz 3 (covers week 5)	- 5%	- Feb 13	15 min
Quiz 4 (covers week 6)	- 5%	- Feb 18	15 min
Midterm 2, (covers weeks 5-8)	- 20%	- Mar 13	45 min
Final exam (cumulative, weeks 1-12)	- 40%	- Scheduled by Registrar.	90 min

All evaluations of lecture material will be performed remotely through Owl. Midterms and the final exam will also utilize Proctortrack. You will be performing an onboarding test to ensure your computer system is suitable. Multiple choice, true/false and similar evaluations will be used.

CHEATING WILL BE DEALT WITH SEVERELY!

Accommodations. As COVID considerations and other restrictions are impacting how things can proceed, this is also impacting student usually handled by Accessible Education (AE) services. As individual AE accommodations are not possible, those with AE approved time accommodation will be afforded those accommodations (as best possible) through added time via Owl and/or ProctorTrack.

There are NO Makeups for the quizzes or midterms!

With valid documentation (or Self-Reported Absence) for a missed assessment, grades will be shifted as follows.

If quiz 1 is missed, the value of quiz 2 becomes 10%.

If quiz 2 is missed, the value of midterm 1 becomes 25%.

If both quiz 1 and 2 are missed, the value of the final exam becomes 50%

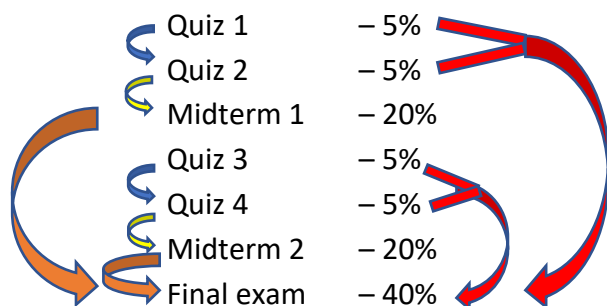
If midterm 1 is missed, the value of the final exam becomes 60%

If quiz 3 is missed, the value of quiz 4 becomes 10%.

If quiz 4 is missed, the value of midterm 2 becomes 25%.

If both quiz 3 and 4 are missed, the value of the final exam becomes 50%

If all four quizzes are missed, the value of the final exam becomes 60%



HOWEVER, to ensure that students demonstrate sufficient mastery of the learning outcomes, a student cannot transfer more than 30% of their term weight to the final. A student cannot reweigh (medical exemptions, SRAs or others) more than 30% weight of evaluations to the final. The final exam cannot have a weight of more than 70%. Of the 4 quizzes and 2 midterms a student must write a number (eg 1 midterm and 2 quizzes) where in the end 30% or less is transferred to the final exam. If this 70% final exam weight threshold is not/cannot be met, see Further Accommodated Evaluations below.

Again, if an evaluation is missed (see below – Student Absences), this must be documented, and only with valid University reasons, including Self-Reported Absences, will the value of that evaluation be shifted as indicated above.

It is Faculty of Science policy that a student who chooses to write a test or exam deems themselves fit enough to do so, and the student must accept the mark obtained. Claims of medical, physical, or emotional distress after the fact will not be considered.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a self-reporting of absence or via the Dean's Office/Academic Counselling unit of your Home Faculty. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in NCB 280, and can be contacted at scibmsac@uwo.ca. Their website is https://www.uwo.ca/sci/undergraduate/future_students/academic_support/academic_counseling.html. There is information below on; the university's medical illness policy; academic accommodation due to illness; and resources for emotional/mental distress.

After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator. Grade/question challenges must be initiated within 2 weeks of mark receipt.

The Final Exam will be scheduled by the registrar's office, www.registrar.uwo.ca. If you miss the Final Exam, please contact your faculty's Academic Counseling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam). You may also be eligible to write the Special Exam if you are in a "Exam Conflict Situation" http://www.registrar.uwo.ca/examinations/exam_schedule.html

There will only be one make-up for the Final Exam. The make-up for the Final Exam will be written (tentative) the first Thursday following the end of term, in this case May 5, 2022, and will be organized by the Faculty of Science. If you cannot complete the make-up final, you will have to take the final when the course is offered next.

Student Absences

Academic Consideration for Student Absences

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

- (i) Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:
 - an absence must be no more than 48 hours
 - the assessments must be worth no more than 30% of the student's final grade
 - no more than two SRAs may be submitted during the Fall/Winter term
- (ii) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.
- (iii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered, unless otherwise instructed in the course outline.

Students should also note that individual **instructors are not permitted to receive documentation directly from a student**, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For the policy on Academic Consideration for Student Absences – Undergraduate Students in First Entry Programs, see:

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

and for the Student Medical Certificate (SMC), see:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy can be found at:

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

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (see http://www.registrar.uwo.ca/examinations/exam_schedule.html).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See Academic Calendar for details (under [Special Examinations](#)).

Further Accommodated Evaluations.

If you have transferred more than 30% of the assessments to the final exam such that its weight is more than 70%, you will have to write an additional exam/evaluation of a format that most suits the instructors, covering the material not assessed. This assessment could be a 3-hour essay examination, where the student is required to write a coherent, grammatically correct essay on topics from missed assessments in the 3 hours at a particular time after the makeup final and in a particular place at the university. Missing this examination/evaluation could result in failure of the course or an incomplete in the course. If given an incomplete the student will make up all the missing components the next time the course is offered.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a [Scholastic Offence](#).

Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, 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 his/her official university address is attended to in a timely manner.

All of the remote learning "live" sessions for this course will be recorded. The data captured during these recordings may include your image, voice recordings, chat logs and personal identifiers (name displayed on the screen). The recordings will be used for educational purposes related to this course, including evaluations. The recordings may be disclosed to other individuals participating in the course for their private or group study purposes. Please contact the instructor if you have any concerns related to session recordings.

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

No electronic devices nor other aids are permitted on tests and exams. **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:

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

Completion of this course will require you to have a reliable internet connection and a device that meets the system requirements for Zoom. Information about the system requirements are available at the following link:

<https://support.zoom.us/hc/en-us>

* Please note that Zoom servers are located outside Canada.

Professionalism & Privacy:

Western students are expected to follow the [Student Code of Conduct](#). Additionally, the following expectations and professional conduct apply to this course:

- 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 are not permitted (audio or video) without explicit permission
- Permitted recordings are not to be distributed
- Students will be expected to take an academic integrity pledge before some assessments
- All recorded sessions will remain within the course site or unlisted if streamed

Click [here](#) for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

We do not consider appeals based on you not meeting a threshold mark that affects your GPA. The mark you earn in this course is your responsibility and yours alone.

Support Services

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

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 Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations.

The policy on Accommodation for Students with Disabilities can be found here: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.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.

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

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

The following links provide additional information about support services at Western University.

[Academic Counselling \(Science and Basic Medical Sciences\)](#) [Appeal Procedures](#)
[Registrarial Services](#) [Student Development Services](#)
[Student Health Services](#)

Land acknowledgment

We acknowledge that Western University is located on the traditional territories of the Anishinaabek (Ah-nish-in-a-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ahpay-wuk) and Chonnonton (Chun-ongk-ton) Nations, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous Peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society. More information about Indigenous Services (<https://indigenous.uwo.ca/>) and this Land Acknowledgement (<https://communications.uwo.ca/comms/land-acknowledgement/>) are available.
