



Biology 3355A (Molecular Cell Biology of Stress)

1. General Course Information

Course Information

Biology 3355A (Molecular Cell Biology of Stress), Fall 2024

Lectures

Tutorials

List of Prerequisites

Unless you have either the requisites for this course or written special permission from your Dean's Designate (Department/Program Counsellors and 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 your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

2 Instructor and Contact Information

Instructor:

Office hours:

Teaching Assistant:

Students must use their Western (@uwo.ca) email addresses and include Bio3355 in the subject line when contacting their instructor or TAs.

3 Course Syllabus, Schedule, Delivery Mode

Course Description and Learning Outcomes: Biology 3355A is an advanced course in cell biology. This course will cover a range of environmental, physiological, and pathological stresses common to animal cells. The focus will be on evolutionarily conserved cell stress responses, individual signaling pathways and the molecules controlling the action of specific stress stimuli. The lecture topics may be adjusted to reflect current progress or to introduce new and exciting developments in the field.

By the end of the course, successful students will be able to:

Describe signaling processes underlying heat shock response, endoplasmic reticulum stress and unfolded protein responses, oxidative stress, hypoxic stress, osmotic stress, metal stress, inflammatory stress, DNA damage response, and nucleolar stress.

Understand the structure and properties of stress-related transcription factors and discuss molecular mechanisms of their regulation in mammalian cells.

Tutorial Schedule:

An explanation of tutorial rotation dates and presentation expectations will be given during your first orientation tutorial session, as highlighted by *grey in the table below.

Tutorial Section	Tutorial dates (weeks and days)											Time	Room
	W1	W2	W3	W5	W6	W9	W10	W11	W12	W13	W14		

Contingency plan: Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will **not** change. Any assessments affected will be conducted online as determined by the course instructor.

4. Course Materials

There is no specific textbook assigned to this course. The list of recommended readings (links to primary and review scientific articles), lecture handouts, announcements, tutorial assignments, and other important course information, will be posted to OWL: <https://westernu.brightspace.com/>. Any changes will be indicated on the OWL site and discussed with the class. Students are responsible for checking the course OWL site (<https://westernu.brightspace.com/>) 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 by phone at 519-661-3800 or ext. 83800. As additional resources, students may consider the following textbooks related to some course topics and activities:

1. Lodish et al. (2021) *Molecular Cell Biology*, 9th Edition, Austin, Macmillian Learning.
2. Alberts et al. (2015) *Molecular Biology of the Cell*, 6th Edition, New York, Garland Science.
3. Knisely, K. (2021) *A Student Handbook for Writing in Biology*, 6th Edition, Macmillian Learning.

Copyright and Audio/Video Recording Statement: Course material produced by faculty is copyrighted and to reproduce this material for any purposes other than your own educational use contravenes Canadian Copyright Laws. You must always ask permission to record another individual and you should never share or distribute recordings and available lecture handouts.

Technical Requirements: When offered in online mode all students must have access to a stable internet connection, and a computer with a working microphone and/or webcam. During in-person learning it is highly recommended that students bring a portable computer that can be used for in-class learning and reporting activities.

5. Methods of Evaluation

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

The overall course grade - **out of 100**- will be calculated as listed below.

Component	Notes	Value
Take-home assignment	submit on OWL	12
Tutorial presentation	Individually scheduled	15
Tutorial participation	Individual Reports and Attendance	5
Midterm Test 1		16
Midterm Test 2		16
Final Exam	TBA and scheduled by the Office of the Registrar	36

Take-home assignment

A short-written assignment will be based on a bioinformatics se

7. Accommodation and Accessibility

Religious Accommodation

grammar and spelling. Cite the ideas of others appropriately.
All course materials created by the instructor 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

9. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling 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/counselling/>

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. If you have any questions regarding accommodations, you may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

Learning-skills counsellors at the Student Development Centre (<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.

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/>.

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

10. How to Be Successful in This Class?

Students enrolled in this class should understand the level of autonomy and self-discipline required to be successful outside of the class hours:

1. Invest in a planner or applicatio