

Chemistry/Biochemistry 9703 – Chemical Biology
Fall 2025 (0.25 credit, general introductory course)

Instructor: Patrick O'Donoghue (course coordinator) – patrick.odonoghue@uwo.ca, 388 MSB.

Overview: This course will begin with a broad overview of chemical biology with special emphasis on topics, including protein synthesis with non-canonical amino acids, probing cellular functions and protein-protein interactions with small molecules, and chemical genetic approaches to drug discovery. Following the course lectures, each student will have the opportunity to lead a Journal Club and discussion session. Students will be expected to write an article review and response to reviewer based on a publication in any area of chemical biology.

Student Evaluation:

Journal Club leader – 35%

Participation in article review – 30%

Written response to reviewer – 35%

Course Schedule: Tuesdays 10:00am – 12:00pm

Location: MSB 282

October 21:

- Lecture 1 – What is Chemical Biology?
- Assignment of Journal Club papers; Discussion of 'article review' and 'response to reviewer' assignments
- Lecture 2 – Protein synthesis with non-canonical amino acids

October 28: no class

November 4:

- Lecture 3 – Modulating cellular functions with small molecules
- Lecture 4 – Small molecule probes of protein-protein interactions

November 11:

- Lecture 5 – Chemical genetics approaches to drug discovery
- Journal Club 1 – Team 1

November 18: Journal Club 2 – Teams 2, 3, 4

November 25: Journal Club 3 – Teams 5, 6, 7

December 2: Journal Club 4 – Teams 8, 9

Key Dates:

November 3: submit Journal Club preferences.

November 14: submit article review to OWL by 5 pm.

December 5: submit 'response to reviewer' article to OWL by 5pm.

*Late work: If the article is 1 day late, the mark will be lowered by 25%. Beyond 1 day late, work will not be accepted.

Learning Outcomes

After completing this course, students should have gained knowledge/understanding of:

- why scientific literacy is important for scientists and the general public.
- scientific literacy in practice through scientific communication in written and oral presentations.
- innovative chemical biology approaches to reveal basic biology and discover new therapeutic compounds.
- how to communicate complex experimental results in the chemical biology area to the general public through an assignment in writing for the lay audience.

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/handbook/appeals/scholastic_discipline_grad.pdf

Plagiarism: Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar).

Biochemistry Graduate Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must submit documentation to Barb Green, Graduate Administrator, Room 342 Medical Sciences Building as soon as possible.

As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several on campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your graduate degree. For example, to support physical activity, all students, as part of their registration, receive membership in Western's Campus Recreation Centre. Numerous cultural events are offered throughout the year. Please check out the Faculty of Music web page <http://www.music.uwo.ca/>, and our own McIntosh Gallery <http://www.mcintoshgallery.ca/>. Information regarding health- and wellness-related services available to students may be found at <http://www.health.uwo.ca/>

Students seeking help regarding mental health concerns are advised to speak to someone they feel comfortable confiding in, such as their faculty supervisor, their program director (graduate chair), or other relevant administrators in their unit. Campus mental health resources may be found at http://www.health.uwo.ca/mental_health/resources.html

To help you learn more about mental health, Western has developed an interactive mental health learning module, found here: http://www.health.uwo.ca/mental_health/module.html. This module is 30 minutes in length and provides participants with a basic understanding of mental health issues and of available campus and community resources. Topics include stress, anxiety, depression, suicide and eating disorders. After successful completion of the module, participants receive a certificate confirming their participation.

Helpful Resources @ Western for Graduate Students

Writing Support Centre <http://www.sdc.uwo.ca/writing/> **SDC's Learning Skills Services**, Rm 4100 WSS, www.sdc.uwo.ca/learning

LS counsellors are ready to help you improve your learning skills. We 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.

The Student Success Centre: <http://success.uwo.ca/>

Statement on Gender-Based and Sexual Violence. Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts at the following website: 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.”