

Biomolecules as Drugs and Imaging Agents

CHEM 9793 2025, 0.25 credit Chemistry Graduate Course

Course Description

An overview of biomolecules and their use as drugs and imaging agents will be presented. The course will focus on the development steps for peptide-based drugs and radiolabeled peptides as imaging agents. Course content will include: examining the process of converting a natural peptide into a drug candidate, exploring the concept of drug delivery as related to peptides, comparing radioisotopes and methods for radiolabelling peptides, and assessing peptide-based imaging agents. The course will conclude with student seminars, where the development of a recent peptide drug or imaging agent is presented by the student.

Course Instructor

The course instructor is Len Luyt (Professor, Departments of Chemistry, Oncology, and Medical Imaging).

Lectures

Lectures will be provided in-person, three hours per week for six weeks duration. Students are expected to attend lectures and to actively participate.

Course Material

There is no official course textbook. Journal articles will be provided. Students will be required to use library resources for database searches and journal articles, for their assignments and independent study. Those with limited background in the organic chemistry of biomolecules will be required to independently read material from an introductory organic textbook.

Course Evaluation

Assignments	30%
Independent Study Report	20%
Independent Study Presentation (includes peer evaluation)	40%
Participation	10%

Course Website and Communication

News and updates will be posted on OWL (<http://owl.uwo.ca>). This is the primary method by which information will be disseminated to everyone in the class. Please remember that it is your responsibility to check OWL on a regular basis.

Email regarding the course must be sent using your Western email account to the course instructor (lluyt@uwo.ca) and must have 9793 in the subject line.

Learning Outcomes

Upon completion of Chem 9793, students will be able to describe the classes of biomolecules being used as drugs/imaging agents, will understand the approaches used to discover and develop peptides as drugs and as imaging agents, will learn to independently seek resources on the topic of biomolecules, and will gain skills in summarizing and presenting scientific information to their peers.

Course attendance and missed course requirements

You are responsible for all information presented during class. Information missed due to course absences will not be considered for the basis of a grade appeal.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your instructor within 48 hours after you are capable to do so. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. The weight of missed course material will be transferred to other course components, at the discretion of the instructor, in cases where medical accommodation has been granted.

Notes on Academic Honesty:

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 Website:

www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

Health and Wellness

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. Information regarding health- and wellness-related services available to students may be found at:

<http://www.health.uwo.ca/>

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. Students seeking help regarding mental health concerns should seek assistance through Student Health Services. Campus mental health resources may be found at:

http://www.health.uwo.ca/mental_health/resources.html