

Pharmacology 4360: Mechanisms of Cancer Chemotherapy Winter Term 2018

Pharm 4360B is a half course to introduce students to the basic concepts in cancer biology and therapeutic properties of anticancer agents. The first module focuses on recent advances in our understanding of the molecular and genetic basis of cancer as well as how signaling is altered in cancer cells, that have led to a new era in cancer therapy. The lectures in the second module will focus on principles of chemotherapy and the concept of targeted therapy, using examples of drugs used in the clinic, as well as new drugs/approaches that may be in clinical trials, including those that target receptor tyrosine or serine/threonine kinases. The class will be in lecture format and meet for 2 h each week.

Lectures:

Wednesday 1:30 p.m. – 3:30 p.m.

Dental Sciences Building, room 2016

Requisites:

Prerequisite(s): Pharmacology 3620, or Physiology 3140, or permission from the Department.

Corequisite(s): None

Antirequisite(s): None

Senate regulation on the student's responsibility regarding requisites:

Unless you have either the requisites 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.

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding accommodation.

Instructor Information

Instructors	Office Hours
Dr. Lina Dagnino (Course Coordinator) ldagnino@uwo.ca Dr. John Di Guglielmo john.diguglielmo@schulich.uwo.ca	By email appointment

Teaching Assistant: Adrienne Borrie (email: aborrie@uwo.ca)

Tutorials:

There are no tutorials in this course. Questions regarding lecture material can be posted in the FORUM section of OWL for this course. The TA will answer the questions.

OWL:

Students with OWL issues should see: <https://owl.uwo.ca/portal/site/owldocs>

Course Objectives:

By the end of this course, students will understand the major mechanisms involved in tumour formation and progression, as well as the hallmarks of cancer. Students will also understand the mechanisms of action of drugs and macromolecules used to treat a variety of carcinogenic tumours, be capable of critically reviewing relevant scientific literature, and of designing experiments to test hypotheses related to carcinogenesis.

Course Schedule

DATE	TOPIC	LECTURER
Module 1 January 10	Course Introduction / Introduction to Cancer Biology Selective proliferative advantage, cell cycle, senescence and apoptosis	LD
January 17	Cancer biology: Stress response changes (autophagy), changes in metabolism (Warburg effect), vascularization (e.g. VEGF)	LD
January 24	Invasion/metastasis, EMT, microenvironment and CAFs	JD
January 31	Immunomodulation/immunotherapies Preclinical cancer models and cancer stem cells Assignment of paper for discussion	LD
Module 2 February 7	Cancer chemotherapy Receptor tyrosine kinases #1	JD
February 14	Receptor tyrosine kinases #2 Quiz 1 on Module 1 +Cancer chemotherapy Assignment of paper for discussion	JD
February 19-23	Spring Reading Week	

February 28	Discussion of paper assigned by LD Written assignment due (turnitin) by 1:30 PM	LD
Module 3 March 7	Cell Cycle	LD
March 14	Immunotherapies	LD
March 21	Discussion of paper assigned by JD Written assignment due (turnitin) by 1:30 PM	JD
Module 4 March 28	Ser/Thr kinase receptors # 1	JD
April 4	Ser/Thr kinase receptors #2 Quiz 2 on Receptor tyrosine kinases, Immunotherapy and Cell cycle	JD
April 11	Review or Guest lecture	TBD

Your primary source of information is the lecture notes, which are available on the course OWL site. Lecture notes will be posted 3-7 days before a given lecture, and you are urged to read them ahead of the class in order to become familiar with the content. Lecturers may provide additional material (scientific papers, diagrams, news items, government regulations etc.) as they choose and, if so, they will be linked to specific lectures on this web site.

A recommended text for the course is “The Biology of Cancer” by Robert A. Weinberg, 2nd Edition (2011)

Evaluation:

Component	Date	% of Final Mark
2 Quizzes	Feb, Apr	15% each quiz
2 paper analysis reports (submitted through turnitin)	Feb, March	10% each
Final exam (cumulative; short answer,multiple choice and/or essay-type questions)	April	50%

Accommodation for quizzes requires proper documentation, as described below, in the “Absence from course commitments” section. If a quiz is missed and accommodation is granted, re-weighting of the final exam will take place.

Note: Across the Basic Medical Sciences Undergraduate Education programs and within the department of Physiology and Pharmacology we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during a course. Final grades on this course will be rounded to the closest whole integer, e.g. a 73.5 becomes a 74. We WILL NOT increase marks to the next grade, e.g. a 69 will NOT be increased to a 70, an 89 WILL NOT be increased to a 90, etc. The mark attained is the mark you achieved and the mark assigned; no adjustments up to the next grade level will be made.

Additional Information/Statements

Statement on Academic Offences

“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:

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

Absence from course commitments

A. Absence for medical illness:

Students must familiarize themselves with the Policy on Accommodation for Medical Illness:

<https://studentservices.uwo.ca/secure/index.cfm>

Statement from the Dean's Office, Faculty of Science

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 the Dean's office as soon as possible and contact your instructor immediately. 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.

In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information please see:

<http://www.uwo.ca/univsec/handbook/appeals/medical.pdf>

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services.

The form can be found at:

https://studentservices.uwo.ca/secure/medical_document.pdf

B. Absence for non-medical reasons:

For **non-medical absences** from quizzes, midterms, tutorials, laboratory experiments, or late essays or assignments, documentation is required, such documentation must be submitted by the student directly to the appropriate Faculty Dean's Office and **not** to the instructor. It will subsequently be the Dean's Office that will determine if accommodation is warranted.

C. Special Examinations

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents.

A Special Examination must be written at the University or an Affiliated University College no later than 30 days after the end of the examination period involved. To accommodate unusual circumstances, a date later than this may be arranged at the time permission is first given by the Dean of the Faculty. The Dean will consult with the instructor and Department Chair and, if a later date is arranged, will communicate this to Registrarial Services. If a student fails to write a scheduled Special Examination, permission to write another Special Examination will be granted only with the permission of the Dean in exceptional circumstances and with appropriate supporting documents. In such a case, the date of this Special Examination normally will be the scheduled date for the final exam the next time the course is offered.

Support Services:

Registrarial Services: <http://www.registrar.uwo.ca>

Academic Counselling (Science and Basic Medical Sciences): <http://www.uwo.ca/sci/counselling/>

USC Student Support Services: <http://westernusc.ca/services/>

Student Development Services: <http://www.sds.uwo.ca>

Student Health Services: <http://www.shs.uwo.ca/>

Students that are in emotion/mental distress should refer to Mental Health@Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.