

1. Course Information

Pharmacology 3620: Human Pharmacology and Therapeutic Principles Fall Term 2019

This is a 1.0 credit, systems-based course in pharmacology that deals with drugs used to treat diseases that affect various systems and organs of the body (e.g. cardiovascular disease, neurological diseases, endocrine disorders etc.). It also presents some important fundamental principles of pharmacology. There is an emphasis on how drugs target the system or organ, mechanisms of drug action, and adverse effects of drugs on the system. Topics in Pharmacology 3620 are closely aligned with topics in Physiology 3120 (Human Physiology). Physiology 3120 is highly recommended as a co-requisite, so that you will learn how an organ system works in physiology and then, in Pharmacology 3620, learn about diseases that affect that system and how drugs work to target and treat those diseases.

Lectures:

Tuesday and Thursday 12:30 p.m. – 1:20 p.m.
Arts and Humanities Building, AHB 1R40

Laboratories and/or Tutorials:

None

Requisites:

Prerequisite(s): Biochemistry 2280A, Biology 2382B

Co-requisite(s): Physiology 3120 is highly recommended

Anti-requisite(s): The former Pharmacology 3550A/B, 3560A/B

Senate regulation regarding 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 an accommodation.

2. Instructor Information

Instructors	Email	Office Hours
Dr. Nica Borradaile (Course Coordinator)	nica.borradaile@schulich.uwo.ca	By email appointment for all instructors
Dr. Angela Beye	abeye2@uwo.ca	
Dr. Lina Dagnino	ldagnino@uwo.ca	
Dr. Marco Prado	mprado@robarts.ca	
Dr. Jane Rylett	jane.rylett@schulich.uwo.ca	
Dr. Rommel Tirona	rtirona@uwo.ca	
Dr. Brad Urquhart	burquha2@uwo.ca	
Dr. Don Welsh	dwelsh24@uwo.ca	
Dr. Cory Yamashita	cyamash@uwo.ca	

OWL:

Students with OWL issues should see: <https://owlhelp.uwo.ca>

3. Course Syllabus

Course Learning Objectives:

- 1) Students will be able to identify the major groups of drugs used to treat a range of diseases, and be able to explain their mechanism(s) of action at their respective target sites.
- 2) Students will be able to identify different classes of drugs within those used for a specific disease process, and identify both beneficial and possibly adverse effects.
- 3) Students will be able to explain the processes by which drugs are absorbed and distributed within the body, and the ways in which the body alters the fate of administered drugs.

Course Schedule:

DATE	TOPIC	LECTURER
September 5	Course Introduction	NB
	Introduction to Pharmacokinetics	RT
September 10	Drug Absorption and Distribution	RT
September 12	Drug Elimination and Dosage Regimens	RT
September 17	Drug Metabolism	RT
September 19	Drug Transporters	RT
September 24	Pharmacodynamics 1	BU
September 26	Pharmacodynamics 2	BU
October 1	Pharmacogenetics 1	BU

October 3	Pharmacogenetics 2	BU
October 8	Routes of Drug Administration	BU
October 10	Introduction to Neoplastic Disease	LD
October 15	Cancer Therapy 1	LD
October 17	Cancer Therapy 2	LD
October 22	Cancer Therapy 3	LD
-----	MIDTERM TEST 1 Coverage	
October 24	Introduction to Neuropharmacology	AB
October 29	Drugs used to treat Anxiety	MP
October 31	Drugs used to treat Depression	MP
November 1	MIDTERM TEST 1 6:00 pm – 8:00 pm	
November 4 - 8	Fall Reading Week	
November 12	Addiction and its Pharmacotherapy	MP
November 14	Analgesia and Anesthesia	AB
November 19	Drugs of Abuse 1	BU
November 21	Drugs of Abuse 2	BU
November 26	Drug Diversion - Special Lecture	CA
November 28	Drugs and the Cholinergic System	AB
December 3	Drugs used to treat Dementia	JR
December 5	Pharmacotherapy of Movement Disorders	JR
Dec 6 - Jan 5	Winter Exams and Break	
January 7	Drugs targeting the Neuromuscular Junction	AB
January 9	Drugs and the Adrenergic System 1	AB
January 14	Drugs and the Adrenergic System 2	AB
January 16	Review for Midterm Test 2	TAs
-----	MIDTERM TEST 2 Coverage (not cumulative)	
January 21	Drugs and the Cardiovascular System 1	DW
January 23	Drugs and the Cardiovascular System 2	DW
January 24	MIDTERM TEST 2 6:00 pm – 8:00 pm	
January 28	Drugs and the Cardiovascular System 3	DW
January 30	Drugs and the Cardiovascular system 4	DW
February 4	Drugs and the Cardiovascular System 5	DW
February 6	Drugs and the Cardiovascular System 6	DW
February 11	Drugs and Respiratory Diseases 1	CY
February 13	Drugs and Respiratory Diseases 2	CY
February 17 - 21	Spring Reading Week	
February 25	Introduction to Endocrine Pharmacology	NB

February 27	Drugs used in Thyroid Disease	NB
March 3	Drugs used in Type 1 Diabetes Mellitus	NB
March 5	Drugs used in Type 2 Diabetes Mellitus	NB
March 10	Drugs used in Inflammatory Diseases and Osteoporosis	NB
March 12	Drugs used to Control Fertility	NB
March 17	Drugs used to treat Obesity and Hyperlipidemia	NB
March 19	Drugs used to treat Hyperlipidemia	NB
March 24	Antimicrobial Drugs	LD
March 26	Antiviral Drugs	LD
March 31	Review for Final Exam	TAs
April 2	<i>Snow Day</i>	
April 6 - 25	<i>Spring Exams (FINAL EXAM - cumulative)</i>	

4. Course Materials

Copyright 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.

Your primary source of information is the lecture notes which are available on the Pharmacology 3620 OWL site. These will be posted a minimum of 24 hours 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 materials as they choose, and these will be linked to specific lectures on the OWL site.

Textbook:

A suggested text for the course is Lippincott Illustrated Reviews: Pharmacology, edited by Karen Whalen, published by Wolters Kluwer (<https://shop.lww.com/Lippincott-Illustrated-Reviews--Pharmacology/p/9781496386113>). The publisher provides additional resources and you will be able to access these by entering a code available in the book. These include a searchable version of the text, all the figures in the book, and an interactive bank of questions.

5. Evaluation:

A detailed and comprehensive set of regulations concerning the scheduling of tests, assignments, etc. is available at:

<http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=5&command=showCategory&SelectedCalendar=Live&ArchiveID=>

Policy on the Rounding and Bumping of Marks:

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 this course. All students will be treated equally and evaluated based only on their actual achievement. **Final grades** on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be bumped to the next grade or GPA, e.g. a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved and the mark assigned; requests for mark “bumping” will be denied.

Component	Date	% of Final Mark
Midterm test 1	November 1, 2019	30
Midterm test 2 (not cumulative)	January 24, 2020	30
Final exam (cumulative)	TBA (April 6 – 25, 2020)	40

Midterm tests and the final exam will consist of multiple-choice questions with 4 options (A, B, C, or D) based on lectures, and any additional information posted on OWL. Midterm tests are given according to the course schedule. Midterm test 2 is not cumulative. The final exam is cumulative, but with emphasis on material taught after midterm test 2.

6. 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/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Statement on the use of Cell Phone and Electronic Devices

The Schulich School of Medicine and Dentistry is committed to ensuring that testing and evaluation are undertaken fairly across all our departments and programs. For all tests and exams, it is the policy of the School and the Department of Physiology and Pharmacology that any electronic devices (e.g. cell phone, tablet, camera, watch, smart watch, ipod, ear buds, headphones) are strictly prohibited. These devices **MUST** be left either at home or with the students bag/jacket at the front of the room and **MUST NOT** be at the test/exam desk or in the individuals pocket. Any student found with one of these prohibited devices will receive a grade of zero on the test or exam. Non-programmable calculators are only allowed when indicated by

the instructor. The Department of Physiology and Pharmacology is not responsible for stolen/lost or broken devices.

Statement on Discussion of Grades

The Department of Physiology and Pharmacology is committed to fair assessment of student work and encourages students to discuss course content and graded work with their peers in an effort to improve learning.

For Students: While all students have the right to question their grade should they feel it's inaccurate, this exercise should be undertaken in a respectful manner. Professionalism and respect should be demonstrated in all interactions with instructors and peers. When discussing a grade or exam question with a professor or teaching assistant, the discussion should focus on your individual concern. Students should remember that some forms of assessment or specific questions are designed to be more challenging than others. In this situation, there may be several students that don't receive the correct answer and this does not necessarily mean that there is a problem with the question or assessment. Concerns from one student that indicate that they are communicating on behalf of a larger group of peers (mob/crowd mentality) will not be considered. Concerns with an assessment should be communicated to the instructor and should reflect your individual concern. Threats of any sort will not be tolerated and will be considered a violation of the student code of conduct. It is a requirement that you treat your instructors with respect and you should expect the same respect returned to you by your instructor.

For Professors and Teaching Assistants: All professors and teaching assistants should keep an open mind when discussing graded work with students. Make an effort to listen to students and try and see their point of view. If there was ambiguity in a question or multiple correct answers that a student brings to your attention, you should revise the grade. If the student concern is not adequately justified, explain your reasoning. Students that have concerns regarding an exam question or graded assignment deserve to be treated with respect. Treat with them with the same respect that you expect from them. That being said, concerns from one student that indicate that they are communicating on behalf of a larger group of peers (mob/crowd mentality) should not be considered.

Statement on Appeals

The Department of Physiology and Pharmacology follows the Western University student academic appeals policy

(http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#SubHeading_181). All appeals to individual graded course components must be submitted to the course instructor within 3 weeks of the grade being released. All final course grade appeals must be received by January 31 (1st term classes) or June 30 (2nd term half classes and full year classes). You must first appeal to the course manager. If this appeal is rejected, then you can appeal to the Undergraduate Chair of the Department of Physiology and Pharmacology. If this appeal is rejected, you may then appeal to the Associate Dean of the Bachelor of Medical Sciences Undergraduate Education Committee.

You must have suitable grounds for appeal which may include: 1) appeal on medical or compassionate grounds; 2) appeal based on extenuating circumstances beyond your control; 3) appeal based on bias, inaccuracy or unfairness. All appeals must be accompanied by a detailed explanation along with supporting documentation. You should submit your appeal as an e-mail with a single attachment. If you have multiple supporting documents, you should merge them into a single document.

Absence from course commitments

Medical/Compassionate Relief Program Policy

*It is current policy that students who are unable to write a test or examination or other form of course evaluation are required to obtain a medical certificate that is taken to the Academic Counseling Office, NCB 280 (for Science and Basic Medical Science students) or to your appropriate Home Faculty Counseling Office. In the case of an unexpected absence on compassionate grounds, documentation is also requested. **Such documentation must be submitted by the student directly to the Academic Counseling office and not to the instructor.** An academic counselor in that office will review and either approve or deny the accommodation request. It will be the Academic Counseling office that will determine if accommodation is warranted. This policy applies to all forms of assessment, including evaluations that are less than 10%.*

A. Absence for medical illness:

Students must familiarize themselves with the Policy on Accommodation for Medical Illness for Undergraduate Students, located at:

http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=1&Command=showCategory&Keywords=medical&SubHeadingID=323&SelectedCalendar=Live&ArchiveID=#SubHeading_323

Statement from the Academic Counselling Office, Faculty of Science (for Science and BMSc students)

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 Academic Counselling 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 by the Academic Counselling Office 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 Academic Counselling Office immediately.

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:

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

B. Absence for non-medical reasons:

For **non-medical absences** from midterm tests or the final exam, documentation is required. such documentation must be submitted to the Academic Counselling Office as soon as possible and contact the course coordinator immediately. It is the student's responsibility to make alternative arrangements with course coordinator once the accommodation has been approved by the Academic Counselling Office 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 Academic Counselling Office immediately.

C. Special Examinations:

http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=5&Command=showCategory&Keywords=special%20examination&SubHeadingID=70&SelectedCalendar=Live&ArchiveID=#SubHeading_70

A Special Examination is any examination other than the regular final examination, and it may be offered only with the permission of the Dean/Academic Counselling Office 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/Academic Counselling Office of the Faculty. The Dean/Academic Counselling Office will consult with the instructor and Department Chair and, if a later date is arranged, will communicate this to the Office of the Registrar.

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/Academic Counselling Office 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.

When a grade of Special (SPC) or Incomplete (INC) appears on a student's record, the notations will be removed and replaced by a substantive grade as soon as the grade is available.

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.sdc.uwo.ca>

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

Students who are in emotional/mental distress should refer to Mental Health@Western https://www.uwo.ca/health/mental_wellbeing/self/student.html for a complete list of options about how to obtain help.