1 Course Details

1.1 Calendar Description

This course will introduce students to the basic principles of pharmacology. Topics to be covered include pharmacokinetics and drug-receptor interactions as well as the mechanism of action and toxicity of drugs acting on the cardiovascular and central nervous system.

Pre-Requisites: BIOC*2580, (1 of ANSC*3080, BIOM*3200, HK*3810, HK*3940, ZOO*3200, ZOO*3600)

1.2 Course Description

This course is intended primarily for students in the BSc Honours Bio-Medical Sciences, Biomedical Toxicology, Neuroscience, Nutritional and Nutraceutical Sciences majors, Biomedical Engineering and other students who have an interest in the treatment of disease processes.

1.3 Timetable

Monday, Wednesday and Friday 9:30 AM to 10:20 AM.

In-person (when permitted): Rozanski Hall Room 101 Note: in-person lectures will not be recorded.

Remote semester start (asynchronous)

1.4 Final Exam

The final exam has been scheduled for April 23, 2022 from 2:30 PM to 4:30 PM. The location will be provided at a later date. Please see WebAdvisor for the latest information.
2 Instructional Support

2.1 Instructional Support Team

Instructor: Dr. Brad Hanna  
Email: bhanna@uoguelph.ca  
Telephone: +1-519-824-4120 x54534  
Office: OVC 1646D

Instructor: Dr. Ron Johnson  
Email: rjohns03@uoguelph.ca  
Telephone: +1-519-824-4120 x54041  
Office: OVC 1683

Course Co-ordinator: Dr. Bettina Kalisch  
Email: bkalisch@uoguelph.ca  
Telephone: +1-519-824-4120 x54939  
Office: OVC 1646F

2.2 Teaching Assistants

Teaching Assistant (GTA): Richa Patel  
Email: rpatel25@uoguelph.ca

Teaching Assistant (GTA): David Bahrami  
Email: bahramid@uoguelph.ca

3 Learning Resources

Course WebSite:

For class information, the course outline and lecture schedule, assessments, test dates and grades please consult the CourseLink site. Instructors will aim to post learning materials on Courselink by 7 pm the evening before each scheduled learning activity.

3.1 Recommended Resources

Principles of Pharmacology, the Pathophysiologic Basis of Drug Therapy, Golan, Tashjian,
4 Learning Outcomes

During this course students should develop knowledge and an understanding of the core concepts of pharmacology and be able to relate these to the pharmacological actions, use and adverse effects of compounds in the specific drug topics covered.

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Describe the basic concepts of pharmacokinetics & pharmacodynamics
2. Understand the quantitative effects of drugs (concentration/dose-response relationships)
3. Describe the concepts of agonism, antagonism, partial agonism, inverse agonism, efficacy, and potency
4. Understand the targets of drug action (eg. receptors, enzymes, ion channels, second messengers and others)
5. Describe the mechanisms of action, uses and side effects of:
   - drugs affecting the autonomic nervous system
   - drugs used for the treatment of cardiovascular conditions
   - drugs affecting the central nervous system
   - pre-anesthetics and anesthetics

5 Teaching and Learning Activities

Class schedule:

In-person (when permitted):

Monday, Wednesday & Friday 9:30 AM -10:20 AM; Rozanski Hall Room 101 Note: in-person lectures will not be recorded.

Remote semester start (asynchronous):

The lectures will follow a Monday, Wednesday Friday schedule, however they will be delivered asynchronously - you can watch the pre-recorded lectures at your convenience.

5.1 Lecture
Mon, Jan 10
Topics: Introduction to Therapeutics

Wed, Jan 12
Topics: Pharmacodynamics 1

Fri, Jan 14
Topics: Pharmacodynamics 2

Mon, Jan 17
Topics: Pharmacodynamics 3

Wed, Jan 19
Topics: Pharmacokinetics 1

Fri, Jan 21
Topics: Pharmacokinetics 2

Mon, Jan 24
Topics: Pharmacokinetics 3

Wed, Jan 26
Topics: Study Day - No Lecture Scheduled

Fri, Jan 28
Topics: Study Day - No Lecture Scheduled

Mon, Jan 31
Topics: Introduction to Autonomic Pharmacology 1

Wed, Feb 2
Topics: Introduction to Autonomic Pharmacology 2
Fri, Feb 4
Topics: Cholinergic Agonists

Mon, Feb 7
Topics: Cholinergic Antagonists

Wed, Feb 9
Topics: Adrenergic Agonists

Fri, Feb 11
Topics: Adrenergic Antagonists

Mon, Feb 14
Topics: Autonomic Applications

Wed, Feb 16
Topics: Study Day - No Lecture Scheduled

Fri, Feb 18
Topics: Study Day - No Lecture Scheduled

Mon, Feb 21 - Fri, Feb 25
Topics: Monday February 21st to Friday February 25th Winter Break

Mon, Feb 28
Topics: Antihypertensive Drugs 1

Wed, Mar 2
Topics: Antihypertensive Drugs 2

Fri, Mar 4
Topics: Drugs Used to Treat Heart Failure

Mon, Mar 7
Topics: Drugs Used to Treat Angina

Wed, Mar 9
Topics: Drugs Used to Treat Arrhythmias

Fri, Mar 11
Topics: Introduction to CNS Pharmacology

Mon, Mar 14
Topics: Parkinsonism

Wed, Mar 16
Topics: Antipsychotic Agents and Lithium

Fri, Mar 18
Topics: Antidepressants

Mon, Mar 21
Topics: Sedative-Hypnotics and Alcohol

Wed, Mar 23
Topics: Drugs of Abuse

Fri, Mar 25
Topics: Preanesthetic Drugs and Anesthetics 1

Mon, Mar 28
Topics: Preanesthetic Drugs and Anesthetics 2

Wed, Mar 30
Topics: Preanesthetic Drugs and Anesthetics 3

Fri, Apr 1
Topics: Preanesthetic Drugs and Anesthetics 4

Mon, Apr 4
Topics: Preanesthetic Drugs and Anesthetics 5

Wed, Apr 6
Topics: Preanesthetic Drugs and Anesthetics 6

Fri, Apr 8
Topics: Study Day - No Lecture Scheduled

---

6 Assessments

6.1 Assessment Details

Online Quizzes (10%)
Five quizzes, each worth 2% of the final grade are scheduled throughout the semester. Quizzes will consist of 10 multiple-choice questions that you will have 20 minutes to answer. Details regarding quiz availability will be provided on the Courselink course website.
Quiz Schedule:

Quiz 1  Pharmacokinetics/Pharmacodynamics: January 26 to January 28, 2022

Quiz 2  Autonomic Pharmacology: February 14 to February 16, 2022

Quiz 3  Cardiovascular Pharmacology: March 9 to March 11, 2022

Quiz 4  CNS Pharmacology: March 23 to March 25, 2022

Quiz 5  Pre-anesthetics and anesthetics: April 6 to April 8, 2022

Autonomic Unknown Assignment (10%)

Due: Tue, Mar 1
This assignment is worth 10% of your final grade and involves the identification of an unknown drug and describing the effects of the drug in the body. Details of the assignment and a marking rubric will be provided on CourseLink.

Midterm Examination (35%)

A midterm examination worth 35% of your final grade will take place the week of February 28th. This midterm covers the topics of Pharmacodynamics & Pharmacokinetics and Autonomic Pharmacology.

If in-person examinations are permitted, the date, time and location will be updated once the examination is scheduled by the Registrar's office.

If in-person examinations are not permitted the midterm will be delivered through CourseLink Quizzes using a remote invigilation tool such as Respondus. Date: March 2, 2022 Time: 5:30 PM to 7:00 PM.

Final Examination (45%)

Date: Sat, Apr 23, 2:30 PM - , 4:30 PM, TBD
The final examination will consist of multiple choice and short answer questions and
covers the topics of cardiovascular pharmacology, CNS pharmacology & anesthetics and pre-anesthetics.

If in-person examinations are permitted, the location will be provided by the Registrar's office later in the semester..

If in-person examinations are not permitted, the exam will be available through CourseLink quizzes using a remote invigilation tool such as Respondus.

7 Course Statements

7.1 Course Website

For course information, learning materials, assessment dates, and grades, please consult the course website (accessible via Courselink).

Instructors will aim to post learning materials on Courselink by 7 pm the evening before each scheduled learning activity.

7.2 Communication with Instructors

Due to the pandemic, we may not have opportunities to answer questions in person. If all questions are handled by e-mail, the volume of messages could become overwhelming at times (some faculty are teaching in several courses with hundreds of students). To minimize the chances of that occurring, we ask that you check Courselink Discussion Boards when you have a content-related question, to see if it has been answered, and post your question there if it has not.

7.3 Netiquette

Online Behaviour

Inappropriate online behaviour will be referred to the office of the Associate Dean (Students and Academic) for investigation. The range of possible penalties is listed in the Undergraduate Calendar, Section VIII: Undergraduate Degree Regulations and Procedures, Academic Misconduct, Penalties, Part A: Range of Penalties That May Be Assessed, which includes loss of marks, loss of university scholarships or bursaries, suspension or expulsion from the university, and other penalties, depending on the offence.

Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor or fellow students
- Using obscene or offensive language online
- Copying or presenting someone else's work as your own
Adapting information from the Internet without using proper citations or references

· Buying or selling term papers or assignments

· Posting or selling course materials to course notes websites

· Having someone else complete your quiz or completing a quiz for/with another student

· Stating false claims about lost quiz answers or other assignment submissions

· Threatening or harassing a student or instructor online

· Discriminating against fellow students, instructors and/or TAs

· Using the course website to promote profit-driven products or services

· Attempting to compromise the security or functionality of the learning management system

· Sharing your user name and password

· Recording lectures without the permission of the instructor

7.4 Exams

If in-person exams are not permitted, a remote invigilation tool such as Respondus will be used for the midterm and final examinations.

7.5 Course Evaluation

Students will be asked to complete an online questionnaire on instructors’ teaching competence during the last two weeks of classes. This is part of the information required by the University to evaluate faculty performance for purposes of Tenure, Promotion and Selective Increases. Administered by a third party rather than the instructors, these evaluations will be delivered to the respective instructors ONLY after the final grades have been submitted to the Registrar’s Office. Note: only the numerical ratings from the form will be made available to the Chair for administrative purposes - the Chair will NOT see any comments that are written on the evaluation forms unless signed by the student.

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or
compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Graduate Calendar - Grounds for Academic Consideration
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions
https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Graduate Calendar - Registration Changes
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-regregchg.shtml

Associate Diploma Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.
Use of the SAS Exam Centre requires students to make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website https://www.uoguelph.ca/sas

For Ridgetown students, information can be found on the Ridgetown SAS website https://www.ridgetownc.com/services/accessibilityservices.cfm

8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University’s policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Graduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph’s procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.
8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (https://news.uoguelph.ca/2019-novel-coronavirus-information/) and circulated by email.

8.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- https://news.uoguelph.ca/return-to-campuses/how-u-of-g-is-preparing-for-your-safe-return/
- https://news.uoguelph.ca/return-to-campuses/spaces/#ClassroomSpaces

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.