BIOM*3090DE COURSE OUTLINE

Goals

This course is designed to provide basic instruction in the principles of pharmacology and is intended primarily for students in the Honours Bio-Medical Sciences, Biomedical Engineering, Nutritional and Nutraceutical Sciences and Specialized Honours Toxicology majors, and other students who have an interest in the treatment of disease processes. The course will emphasize pharmacokinetic principles, drug-receptor interactions, mechanisms of drug action and toxicity and will provide an introduction to drugs that act on the nervous and cardiovascular systems. The main goal of this course is a strong knowledge base of pharmacology that will provide the framework for future pharmacology courses provided in the department of Biomedical Sciences and beyond.

Objectives

Upon successful completion of this course you should be able to:

- Recognize the fundamental principles of pharmacodynamics (i.e. drug-receptor interactions) and pharmacokinetics (i.e. absorption, distribution, metabolism, and elimination of drugs).
- Identify how drugs alter cellular function through the study of pharmacodynamics.
- Determine how the body handles drugs through pharmacokinetic processes such as absorption, distribution, metabolism, elimination, dose-response relationships, half-life, steady-state concentrations and volume of distribution.
- Describe the pharmacology of the autonomic nervous system at an introductory level as preparation for understanding CNS drug actions.
- Describe the distribution and identify the function of clinically relevant receptors in the autonomic nervous system and identify why they represent useful targets for therapeutic manipulation.
- List and discuss selected drugs used to stimulate or inhibit the sympathetic or parasympathetic nervous systems, including their clinical uses and potential adverse effects.
- Name major classes and provide specific examples, mechanisms of action, adverse effects and contraindications for drugs affecting the autonomic nervous system, cardiovascular system and central nervous system.

- Name the major classes and provide specific examples, mechanisms of action, adverse effects and contraindications of pre-anesthetics and anesthetics.

**Time Commitment and Workload**

A lot of information is presented in this course. You are responsible for 0.5 credit worth of information presented over one semester. Therefore it is recommended that you spend at minimum an average 9 hours/week to learn and review the material (including completion of online assignments). Due to the volume of information presented, the course will provide a framework of the fundamental principles of pharmacology including autonomic, cardiovascular and central nervous system pharmacology. You will be given a list of drugs that you are responsible for learning the mechanism of action and adverse effects on the body.

**Textbook(s)**


Textbooks can be purchased at the University of Guelph Bookstore or the Guelph Campus Co-op Bookstore.

**Course Structure**

The concepts of this course are presented in 6 online units. These units will help guide you in pacing yourself through the course materials. The units are as follows:

UNIT 01: Pharmacokinetics
UNIT 02: Pharmacodynamics
UNIT 03: Autonomic Pharmacology
UNIT 04: Cardiovascular Pharmacology
UNIT 05: CNS Pharmacology
UNIT 06: Pre-anesthetics and Anesthetics

Note: It is strongly recommended that you follow the course Schedule (see Schedule link located in the top navigation bar). The Schedule outlines what you should be working on during each week of the course. By following the Schedule, you will be
better prepared to complete course assignments and will be able to participate more effectively in the online discussions. Also note each of the 6 units are not of equal length.

**Method of Instruction and Evaluation**

**Examinations** will consists of multiple-choice (MC) and or short answer (SA) questions to test students' knowledge of physiology. Multiple-choice questions will also constitute five **online quizzes** that will compose 10% of your overall mark (approximately 10 questions per quiz). The format of the online quizzes is similar to the midterm and final exam questions and is included in the course to facilitate staying on schedule of the assigned material. More details regarding each examination will be provided in the announcement section prior to the evaluation.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Value</th>
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<tbody>
<tr>
<td>Quizzes (5 x 2%)</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm</td>
<td>40%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>50%</td>
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<tr>
<td><strong>Total</strong></td>
<td>100%</td>
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**Contact Information**

**Instructor**

Bettina Kalisch [bkalisch@uoguelph.ca](mailto:bkalisch@uoguelph.ca)

**Teaching Assistant**

Karson Theriault [theriaultk@mail.uoguelph.ca](mailto:theriaultk@mail.uoguelph.ca)
Technical Support

If you have any questions regarding the technical requirements of this course or about access to your course website please contact:

CourseLink Technical Support
University of Guelph
Day Hall, Room 211
Email: courselink@uoguelph.ca
Tel: 519-824-4120 ext. 56939
Toll-Free (CAN/USA): 1-866-275-1478

Walk in hours (Eastern Time):
Mon - Fri: 8:30 am - 4:30 pm

Phone/email hours (Eastern Time):
Mon - Fri: 8:30 am - 8:30 pm
Sat: 10:00 am - 4:00 pm
Sun: 12:00 pm - 6:00 pm

General Inquiries

If you have any general questions about your course or about online learning, please contact our main office:

Open Learning and Educational Support
University of Guelph
Johnston Hall, Room 160
Email: info@OpenEd.uoguelph.ca
Tel: 519-767-5000

Undergraduate Policies and Resources

As a student of the University of Guelph, it is important for you to understand your rights and responsibilities and the academic rules and regulations that you must abide by.
If you are a registered University of Guelph Degree Student, consult the Undergraduate Calendar for the rules, regulations, curricula, programs and fees for current and previous academic years.

If you are an Open Learning Program Student, consult the Open Learning Program Calendar for information about University of Guelph administrative policies, procedures and services.

Email Communication

University of Guelph Degree Students

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

Open Learning Program Students

Check your email account (the account you provided upon registration) regularly for important communications, as this is the primary conduit by which the Open Learning and Educational Support will notify you of events, deadlines, announcements or any other official information.

When You Cannot Meet Course Requirements

When you find yourself unable to meet an in-course requirement due to illness or compassionate reasons, please advise your course instructor in writing, with your name, ID number and email contact.

University of Guelph Degree Students

Consult the Undergraduate Calendar for information on regulations and procedures for Academic Consideration.

Open Learning Program Students

Please refer to the Open Learning Program Calendar for information on regulations and procedures for requesting Academic Consideration.
Drop Date

University of Guelph Degree Students

The last date to drop one-semester courses, without academic penalty, is indicated in the Schedule section of this course website. See the Undergraduate Calendar for regulations and procedures for Dropping Courses.

Open Learning Program Students

Please refer to the Open Learning Program Calendar.

Copies of Assignments

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

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment.

University of Guelph Degree Students

Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email SAS or visit the SAS website.

Open Learning Program Students

If you are an Open Learning program student who requires academic accommodation, please contact the Academic Assistant to the Director. Please ensure that you contact us before the end of the first week of your course (every semester) in order to avoid any
delays in support. Documentation from a health professional is required for all academic accommodations. Please note that all information provided will be held in confidence.

If you require textbooks produced in an alternate format (e.g., DAISY, Braille, large print or eText), please contact the Academic Assistant to the Director at least two months prior to the course start date. If contact is not made within the suggested time frame, support may be delayed. It is recommended that you refer to the course outline before beginning your course in order to determine the required readings.

The provision of academic accommodation is a shared responsibility between OpenEd and the student requesting accommodation. It is recognized that academic accommodations are intended to “level the playing field” for students with disabilities.

**Academic Misconduct**

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 discourages misconduct. 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.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar.

**Acceptable Use**

The University of Guelph has an Acceptable Use Policy, which you are expected to adhere to.
Copyright Notice

All content within this course is copyright protected. Third party copyrighted materials (such as book chapters and articles) have either been licensed for use in this course, or have been copied under an exception or limitation in Canadian Copyright law.

The fair dealing exemption in Canada’s Copyright Act permits students to reproduce short excerpts from copyright-protected materials for purposes such as research, education, private study, criticism and review, with proper attribution. Any other copying, communicating, or distribution of any content provided in this course, except as permitted by law, may be an infringement of copyright if done without proper license or the consent of the copyright owner. Examples of infringing uses of copyrighted works would include uploading materials to a commercial third party web site, or making paper or electronic reproductions of all, or a substantial part, of works such as textbooks for commercial purposes.

Students who upload to CourseLink copyrighted materials such as book chapters, journal articles, or materials taken from the Internet, must ensure that they comply with Canadian Copyright law or with the terms of the University’s electronic resource licenses.

For more information about students’ rights and obligations with respect to copyrighted works, see Fair Dealing Guidance for Students.

Rights and Responsibilities

For distance education (DE) courses, the course website is considered the classroom and the same protections, expectations, guidelines, and regulations used in face-to-face settings apply, plus other policies and considerations that come into play specifically because these courses are online.

Please consult the Open Learning and Educational Support website for more information on your rights and responsibilities when learning in the online environment.

Plagiarism Detection Software

Students should be aware that faculty have the right to use software to aid in the detection of plagiarism or copying and to examine students orally on submitted work.
For students found guilty of academic misconduct, serious penalties, up to and including suspension or expulsion from the University can be imposed.

**Religious Holidays**

Should a student need to miss scheduled tests, mid-term examinations, final examinations, or requirements to attend classes and participate in laboratories for religious reasons, please advise the instructor within two weeks of the distribution of this course outline so that alternate arrangements can be made.