Welcome to BIOM*4090DE Pharmacology! This course is the second of a two-course introduction to pharmacology (the first being BIOM*3090). Drugs used in the treatment of inflammatory, allergic, hormonal, infectious, parasitic, neoplastic, and hemorrhagic/thromboembolic diseases will be discussed from a systemic perspective. By the end of this course students should understand the mechanisms of action of selected drugs and be able to relate these to both the desired clinical effects and any common adverse drug reactions.

The course begins with an introduction to endocrine pharmacology and some of the drugs that are used to treat endocrine disorders. This unit introduces the physiology and regulation of hypothalamic and pituitary hormones with a focus on feedback regulation. Topics covered include, the adrenal axis, thyroid gland, gonadal axis, posterior pituitary and endocrine pancreas. The pharmacologic application of various drugs will also be discussed.

Unit 04 will discuss drugs that are used to treat inflammation such as NSAIDS and glucocorticoids. Unit 05 will focus on drugs that are used to treat blood disorders such as hemorrhagic disease and thromboembolic disease. A substantial amount of content will then be dedicated to drugs that are used to treat infections (Units 06, 07, & 08). These units will examine the principles of antibacterial, antifungal and antiviral therapies. In Unit 09 we will investigate cancer development as well as some of the current anticancer drugs that are available. The last unit that we will study focuses on parasitic infestations and drugs that are used to treat them.

You will notice throughout the course that there will be some overlap with the pharmacological agents that are discussed and that is because many drugs act on different tissues in the bodies based on the receptors that are present. We will explore the mechanisms of action of drugs and identify the potential adverse effects that are associated. You will also notice that your knowledge of basic physiology and BIOM3090 is very important and you will need to apply it to this course in order to be successful.

**Time Commitment and Workload**
A lot of information is presented in this one semester course. You are responsible for 0.5 credit worth of information. It is recommended that you spend at minimum an average 9 hrs/week to learn/review the material (including completion of online assignments).

**Course Goals and Objectives**

**Goals**
This course is designed to build on the concepts you learned 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 drugs that are used to treat specific disorders or infections. The main goal of this course is a strong knowledge base of pharmacology that will provide the framework for future pharmacology courses or application beyond the department of Biomedical Sciences.
Objectives
Upon successful completion of this course you should be able to:

- Describe fundamental pharmacokinetic principles (recall from BIOM*3090)
- Describe basic mechanisms by which selected classes of systemic drugs exert their therapeutic actions
- Recognize and explain pathophysiological, biochemical, pharmacological and patient-specific factors that may alter a patient’s response to a particular drug
- Recognize the generic name and class (+/- trade or “brand” names) of common drugs used to treat common systemic disorders
- Explain how/why adverse drug reactions occur and know the main adverse effects of selected major classes of drugs used to treat common systemic disorders

Required Resources

Textbook
Publisher: Wolters Kluwer

Course Structure

The concepts of this course are presented in 11 online units in 2 main sections. These units will help guide you in pacing yourself through the course materials.

The units are as follows:

1. Drugs Used in the Treatment of Endocrine Disorders
   - Unit 01: Hypothalamic-Anterior Pituitary Hormones, Adrenal Axis, Thyroid Gland
   - Unit 02: Gonadal Axis, Posterior Pituitary, and Bone Mineral Homeostasis
   - Unit 03: Endocrine Pancreas and Growth Hormone Axis
   - Unit 04: Drugs Used in the Treatment of Inflammation
   - Unit 05: Drugs Used in the Treatment of Disorders of the Blood

2. Drugs Used in the Treatment of Infections
   - Unit 06: Principles of Antibacterial Therapy, Beta-Lactams
   - Unit 07: Aminoglycosides, Tetracyclines
   - Unit 08: Sulfonamides, Fluoroquinolones, Macrolides, Chloramphenicol
   - Unit 09: Antifungal Drugs, Antiviral Drugs
   - Unit 10: Drugs Used in the Treatment of Cancer
   - Unit 11: Drugs Used in the Treatment of Parasitic Infestations

Method of Instruction and Evaluation

Examinations will consists of multiple-choice (MC) and/or short answer (SA) questions. 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>
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<tr>
<td>Midterm</td>
<td>40%</td>
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<tr>
<td>Final Exam</td>
<td>50%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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**Contact Information**

**Instructor**
Laura A. Favetta, PhD  
Rm3620 Biomedical Sciences, Ph: (519) 824-4120 Ext.56212, Email: lfavetta@uoguelph.ca

**Teaching Assistant**
Eric Lawton: elawton@uoguelph.ca

**Technical Support**
For assistance with the course website please contact:
CourseLink Technical Support, University of Guelph, Day Hall, Room 211  
**Email:** courselpink@uoguelph.ca  
**Phone:** 519-824-4120 ext. 56939  
**Toll-Free (CAN/USA):** 1-866-275-1478  
**Walk-In hours (ET):** Monday - Friday: 8:30am - 4:30pm  
**Phone/Email hours (ET):**  
Monday - Friday: 8:30am - 8:30pm  
Saturday: 10:00am - 4:00pm  
Sunday: 12:00pm - 6:00pm

**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.
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.

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

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.