

<b>Course ID:</b>	<b>Course Title:</b>	<b>Fall 2018</b>
<b>BCH 357</b>	<b>Chemical Pharmacology</b>	<b>Prerequisite: Biochemistry</b>
		<b>Credits: 3</b>

Class Information		Instructor Information		Important Dates	
<b>Days:</b>	W/F	<b>Instructor:</b>	Liza Abraham PhD	<b>First day of classes:</b>	Wed, Sept 5
<b>Time:</b>	11:15-12:30	<b>Email:</b>	<a href="mailto:lbraham@ambrose.edu">lbraham@ambrose.edu</a>	<b>Last day to add/drop, or change to audit:</b>	Sun, Sept 16
<b>Room:</b>	A 2212	<b>Phone:</b>	403-410-2000 ext.6921	<b>Last day to request revised exam:</b>	Mon, Oct 22
<b>Lab/ Tutorial:</b>		<b>Office:</b>	A2160	<b>Last day to withdraw from course:</b>	Mon, Nov 12
		<b>Office Hours:</b>		<b>Last day to apply for coursework extension:</b>	Mon, Nov 19
<b>Final Exam:</b>	Tuesday December 18 (9:00-12:00)			<b>Last day of classes:</b>	Tue, Dec 11

### Course Description

This course looks at the core concepts in Pharmacology. These include Principles of Drug Action- pharmacokinetics and pharmacodynamics, Drug Discovery, topics in neuropharmacology, Cancer drugs, NSAIDs and antibacterial.

### Expected Learning Outcomes

On successful completion of this course the student should be able to explain:

- Pharmacodynamics: how drugs act on their targets in the body and specific class of drugs, Describe the main drug targets, interpret dose response curves for agonists, antagonists, and inverse agonists
- Pharmacokinetics - the processes of absorption, distribution, metabolism and excretion for specific drugs; Explain the effects of different routes of administration on absorption of drugs, and effects of food and drug interactions on drug disposition
- Drug Discovery and Structure-Activity Relationships
- Major drugs in Neuropharmacology, as Antibacterials, NSAIDs and Cancer Drugs

## Textbooks (Suggested)

**Rang, H.P.**, Dale, Ritter, Flower & Henderson (2015): Pharmacology, 8<sup>th</sup> Edition. Churchill Livingstone. ISBN 13978-0-7020-5362-7.

**Golan, D.E.**, et al., (2011) Principles of Pharmacology 3<sup>rd</sup> edition. LWW. ISBN 9781451118056).

*Lippincott's Illustrated Reviews: Pharmacology, 6<sup>th</sup> Edition* Author : Karen Whalen ISBN : 9781469887562  
Cover Type : Paperback Pages : 680 Pub

## Course Schedule: (Tentative Lecture Schedule)

Week of	Lecture	
Sep 3	Introduction to the course, Pharmacodynamics	
Sep 10	Pharmacodynamics	
Sep 17	Pharmacodynamics	Assignment 3/1 _ September 21/Friday
Sep 24	<b>Pharmacokinetics/Metabolism</b>	<b>Quiz 1 _ September 26</b>
Oct 1	Oct.2-3 Spiritual Emphasis days (no class) Pharmacokinetics/Metabolism	Assignment 3/2 _ October 5/Friday
Oct 8	<b>Oct 8: Thanks Giving (no class)</b> Neuropharmacology	
Oct 15	Neuropharmacology	Quiz 2 October 17 Assignment 3/3 October 19 /Friday
Oct 22	Antibacterials	Assignment 1 Due October 23 by 5:00 pm
Oct 29	Antibacterials	
Nov 5	<b>Nov.5-9 (mid-semester break; no classes)</b>	
Nov 12	NSAIDs	Quiz 3 November 14/Wednesday Assignment 3/4 November 14/Friday
Nov 19	Cancer Drugs	Assignment 2 Due November 20 by 5 :00 pm In-Class Discussion (November 21, Friday)
Nov 26	Cancer Drugs	
Dec 3	Cancer Drugs	Assignment 3/5 December 7/Friday
Dec 10	Last Day of Class-Dec.7 Final Exam : Tuesday/ December 18 (9:00-12:00)	Final Exam December 18

## Requirements:

150 Ambrose Circle SW, Calgary, AB T3H 0L5  
T 403-410-2000 TF 800-461-1222  
info@ambrose.edu  
**ambrose.edu**

## Requirements:

## Grade Summary:

The available letters for course grades are as follows:

<u>Letter Grade</u>	<u>Description</u>
A+	
A	Excellent
A-	
B+	
B	Good
B-	
C+	
C	Satisfactory
C-	
D+	
D	Minimal Pass
F	Failure

## Grading Scale:

A+	A	A-	B+	B	B-
95% - 100%	87% - 94.99%	82% - 86.99%	77% - 81.99%	72% - 76.99%	66% - 71.99%

C+	C	C-	D+	D	F
62% - 65.99%	58% - 61.99%	54% - 57.99%	50% - 53.99%	45% - 49.99%	< 44.99%

In determining the overall grade in the course the following weights will be used:

Quizzes	30% (3 of them)
Assignments	30%
Final Examination	40%

Because of the nature of the Alpha 4.00 system, there can be no uniform College-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

Students must complete three assignments in this class:

**Assignment 1 (10%) Due : October 23 by 5:00 pm**

A list of topics related to medical marijuana will be provided. Each student should prepare a clear, concise report of the paper, which does not exceed 2 pages. Include a conclusion and the references. Based on your reading; are cannabinoids effective in treating the medical condition? Provide evidence based support for your conclusion. Which ingredient is responsible for the activity? Use PUBMED to carry out your research. It's your responsibility to narrow it down to few well documented papers to write the report. This is 10% of the course mark. No late submission is allowed. You'll lose 10% of the mark per day for late submission including the weekends. You will not be able to submit it after five days. Grading will be based on the quality of your work. All relevant papers concerning your topic must be covered.

Effectiveness of Cannabinoids in the medical conditions:

1. Chronic pain/ Pain management/Neuropathic pain
2. Anti-inflammatory drugs
3. Anxiety/depression/panic disorder /Post Traumatic Stress Disorder/Schizophrenia
4. Degenerative/pervasive neurological conditions
5. Alzheimer's
6. Parkinson's Disease
7. Cancer Symptom Management-chemotherapy-induced nausea and vomiting,
8. Immunosuppressants
9. Dermatology
10. Multiple sclerosis (MS)
11. Molecular Targets of Cannabidiol in Neurological Disorders
12. Gastro-Intestinal Disorders
13. Epilepsy
14. Sleep disorders

**Assignment 2: Drug Evaluation Report (10%) Due November 20 by 5 pm**

There are four drugs for you to evaluate. They belong to four different classes. Each student should select a drug to work on. Create a PPT presentation addressing the following aspects:

- Structure
- Mechanism of its therapeutic effect; include the signal transduction pathways, if applicable.
- Metabolism
- Prepare two multiple choice questions for each drug.

- There's no minimum or maximum number of slides; I will look at the quality of your work in terms of adhering to the literature of what's known of the drug as well as the quality of the multiple choice questions: grading will be individual.
- **We'll use some class time on November 21, Friday.** Students will form into groups based on the class of drugs they were working on. Discuss in your groups what you have learned, your multiple choice questions; modify, or rewrite questions, if needed. Combine your slides together, include an outline, with your name on the slides. Email me your slides with questions by end of the class time.
- Every group will have two representatives who will present their work to other groups. You will also explain your multiple-choice questions to the rest of the students. You will be responsible to study the multiple choice questions for the exam. I will post your slides with questions on Moodle.

PREDNISONE/Alemtuzumab/Morphine/Isoflurane

METHYLPREDNISOLONE/Basiliximab/ Naloxone/Methohexital

DEXAMETHASONE / Cyclosporine/Buprenorphine/Propofol

HYDROCORTISONE /Tacrolimus/ Fentanyl/Nitrous Oxide

CORTISONE/Sirolimus/ Oxycodone/Thiopental

### **Assignment 3 (10%)**

There will be prescribed literature to read every two week outside of the classroom. Each student needs to submit a summary of the work (not more than a page) that relates to the article and come up with one multiple choice question. I will look at the quality of your work in terms of adhering to the literature of what's known of the drug as well as the quality of the multiple choice questions

### **Academic Accommodation:**

Ambrose University is committed to ensuring that each student is afforded an academic environment that has been developed on the principles of equal and equitable access, respect for individual differences, and academic integrity. Accessibility and Support Services offers services to students with documented disabilities including learning disabilities, chronic health issues, hearing and visual impairment, disabilities and temporary impairment due to accident, illness or injury. It is the student's responsibility to contact the Accessibility and Support Services office to request academic accommodation. The nature and type of academic accommodations vary from student to student and are dependent upon the student's disability and the academic requirements.

If you are a student with a documented disability who may require academic accommodation and have not registered with Student Accessibility and Support Services, please contact their office at [accessibility@ambrose.edu](mailto:accessibility@ambrose.edu) or (403) 410-2000 ext. 2956. Students who have not registered with Student Accessibility Services are not eligible for formal academic accommodation. For additional information on support services and accommodations for students with disabilities, visit: [https://ambrose.edu/student\\_life/accessibility-and-support-services](https://ambrose.edu/student_life/accessibility-and-support-services)

**Attendance:**

Class participation is extremely important to your learning in this course. If you miss any class please make sure to complete the notes from your peers.

In respect to the professor and to your fellow students, we ask that you:

- a) Turn your phone off during class and that you don't use it for texting during lecture or lab;
- b) Not have conversations with the people beside you during lecture – it is very distracting to the people around you;
- c) Use your laptops for lecture material and assignments only – that you are not using the internet or Facebook during class time;
- d) Arrive to lecture, lab and tutorial on time; you will not be permitted in the lab if you miss the pre-lab talk;
- e) Don't listen to music in class or lab. These will help to maximize the learning experience for you and your fellow students (and will keep your professor in a good mood).

## Ambrose University Academic Policies:

### Communication

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

### Registration

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and/or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline**; please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

### Exam Scheduling

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

### Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic devices in class. The professor has the right to disallow the student to use a

laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

### Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at [privacy@ambrose.edu](mailto:privacy@ambrose.edu).

### Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a course Extension from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

### Appeal of Grade

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Registrar's Office in writing and providing the basis for appeal within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal. If the appeal is sustained, the fee will be refunded.

### Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

**Note:** Students are strongly advised to retain this syllabus for their records.