1. Course Information

Pharmacology 4380B - Neuropharmacology of Central Synaptic Transmission
Winter term 2018

Description: This course will focus on the cellular and molecular mechanisms underlying the actions of drugs on the central nervous system. The focus will be on recent developments in the field of neuroscience and how these new findings can help on the treatment of neurodegenerative diseases.

Lectures:
Tuesday 12:30-14:30
Room: MSB 384

Requisites:
Prerequisite(s): Pharmacology 3620, or the former Pharmacology 3550A/B and 3560A/B; Physiology 3140A; or permission of the Department.

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

<table>
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<tr>
<th>Instructors</th>
<th>Email</th>
<th>Office</th>
<th>Phone</th>
<th>Office Hours</th>
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<tbody>
<tr>
<td>Dr. Vania Prado (Course Coordinator)</td>
<td><a href="mailto:vprado@uwo.ca">vprado@uwo.ca</a></td>
<td>RRI-3486</td>
<td>931-5777 x24889</td>
<td>12:30-14:30</td>
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<tr>
<td>Dr. Michael Poulter</td>
<td><a href="mailto:mpoulter@robarts.ca">mpoulter@robarts.ca</a></td>
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OWL:

Students with OWL issues should see: https://owl.uwo.ca/portal/site/owldocs
3. Course Syllabus

The course is taught by two professors, and involves significant student participation through presentation and discussion of research articles from the scientific literature.

By the end of this course, successful students will be able to:

- Identify critical aspects from research articles through in-class presentation and discussion as well as through independent written report.
- Identify and describe different types of genetically modified mouse models (transgenics, knock-outs, knock-ins) as well as different methodologies available to modulate neurotransmission (optogenetics, chemogenetics, etc) and their use on better understand neurological diseases.
- Describe cellular and molecular mechanisms underlying diseases of the nervous system such as epilepsy, depression, Alzheimer disease, Parkinson disease, and mechanism of action of drugs used in the treatment.

Jan 9 – Introduction to the course – (V. Prado)
Jan 16- Neurotransmission (V. Prado)
Jan 23- Paper presentation –Neurotransmission (V. Prado)
Jan 30- Presentation clinical trials (V. Prado)

Feb 6- Epilepsy and its pharmacological management. (Poulter)
Feb 13- Paper presentation –Epilepsy (Poulter)
Feb 20 – Reading week
Feb 27- Midterm exam (V. Prado)

Mar 6- Major Depressive disorder and Schizophrenia: 5HT and dopamine. (Poulter)
Mar 13- Paper presentation –Depression (Poulter)
Mar 20- Cholinergic transmission – Alzheimer’s disease (V. Prado)
Mar 27- Paper presentation- AD (V.Prado)

Apr 03- Dopaminergic transmission Parkinson's Disease (V. Prado)
Apr 10- Paper presentation Parkinson’s ( V.Prado)
Apr 14- 30 (TBD) – Final Exam (V Prado)

4. Course Materials

Lecture materials, which will be posted on the webct site https://owl.uwo.ca/

Research articles, which will be used for student presentations, will be also posted on the webct site https://owl.uwo.ca/
5. Evaluation:

<table>
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<th>Component</th>
<th>% of Final Mark</th>
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<tr>
<td>Clinical trial presentation</td>
<td>10%</td>
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<tr>
<td>Midterm test</td>
<td>25%</td>
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<tr>
<td>Paper Presentation</td>
<td>25%</td>
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<tr>
<td>Final exam</td>
<td>40%</td>
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The midterm test and final examination will consist of essay and/or short-answer style questions. Other than lectures given by the instructors, students are expected to know the main results of the papers presented.

The clinical trial presentation should address objectives, description of the method, what has the clinical trial been used for and what are other possible applications, as well as the problems associated. The class will be divided in 5 groups and each group will present one clinical trial. Presentation will be on January 30th and will represent 10% of the student mark. Each group will have 10 minutes for presentation and we will have 10 minutes for discussion. Clinical trial theme is going to be distributed on Jan 9th (Introduction to the course).

For the paper presentations, class will be divided into 5 groups (3-4 students). For each “paper presentation class” only one paper is going to be discussed. This paper has to be read by all the students. One group will be in charge of presenting the paper. Power point should be used for the presentation. The talk will last for about 30 minutes, during which the objectives and background of the research, relevant experimental methodology and results, as well as summary of observations and conclusions are to be described. The other four groups have to come with 2-3 questions (and answers) about the paper presented so that we can have a high level discussion. Each student from the presenting group should be able to answer questions related to the paper presented. Every paper presentation class is going to be marked (5 marks each). All students are going to be marked in each presentation (1 group based on the presentation and answer to the questions, the other four groups on the questions proposed and their involvement on the discussion). Marks are going to be released the week following each presentation.

Note: it is the policy of the Department of Physiology and Pharmacology and the BMSc program in the Schulich School of Medicine and Dentistry to report the grade you earned in the course. Grades will not be “bumped”. For example, if your final grade is 78.45%, it will be entered as 79% and will not be “bumped” to 80%.

6. Additional Information/Statements

Statement on Use of Electronic Devices
Students are allowed to bring PRINTED unmarked papers into the exam. Computers will not be allowed.

**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/handbook/appeals/scholastic_discipline_undergrad.pdf.”

“All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).”

**Absence from course commitments**

**A. Absence for medical illness:**

Students must familiarize themselves with the Policy on Accommodation for Medical Illness for Undergraduate Students, located at:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

The policy is also accessible from the Medical Accommodation Policy link at
https://studentservices.uwo.ca/secure/index.cfm

**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. For further information please see:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

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:
https://studentservices.uwo.ca/secure/index.cfm
B. Absence for non-medical reasons:
Students who are in emotional/mental distress should refer to Mental Health@Western http://www.uwo.ca/uwocom/mentalhealth/ for a complete list of options about how to obtain help.

C. Special Examinations
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/undergrad/academic_counselling/index.html

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 http://www.uwo.ca/uwocom/mentalhealth/ for a complete list of options about how to obtain help.