

1. Course Information

Physiology 4600A Diseases of Ion Channels updated on June 5, 2017

This course will be offered in Fall term 2017. There will be an enrolment limit of 36 students.

This is a 4th year course on ion channel related diseases, including, epilepsy, congenital hearing loss, immunodeficiency, and cardiac arrhythmias. We will cover physiology and pathophysiology of relevant ion channels. By the end of the course, successful students will be able to: 1) understand/explain the mechanisms of channel physiology and how diseases are related to ion channel function; 2) effectively present research papers.

Anti-requisite: None

Prerequisites: Physiology3120 and Physiology3140A.

2 lecture hours (lecture vs seminar approximately 3:2). 0.5 course

The course is team taught, with three professors, and involves student participation through presentation and discussion of research papers. Evaluation of student performance will include a midterm test (30%), participation 5%, marks for presentation (20%), a written summary of the presentation (5%), and a final examination (40%). The midterm test and final examination will consist of essay and short-answer style questions. Lecture materials will be posted on the web site <https://owl.uwo.ca>.

Papers to be used for student presentations will be distributed one week prior to presentation. The dates of presentations will be assigned on a random basis. There will be 9-18 papers presented in class. Two students will be paired up to present each paper. The talk will last for 20 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. Two students should contribute equally to the presentation especially on results and discussion. Attention should focus on the physiological mechanisms studied. A question period of 5-10 minutes will follow each talk. After the talk, the students are required to submit a written summary of their talk, to be posted on the web site. The summary should be less than 2 pages, containing hypothesis, objectives, brief methods and main results of the paper. Students who did not submit a summary within 4 days of the presentation will lose marks (maximum 5%). Power point or equivalent should be used for presentation.

Course Manager: Dr. Donglin Bai DSB 00073 donglin.bai@schulich.uwo.ca

Instructors: Dr. L. Stan Leung MSB 236 sleung@uwo.ca

Dr. Wei-Yang Lu RRI 7240 wlu53@uwo.ca

SCHEDULE Physiology 4600A (2017)

Wednesdays, 2:30 – 4:30 pm, in DSB 2016

(11 papers scheduled, student presentation schedule will be posted on OWL)

Sept. 13	Introduction to the course Lecture on Epilepsy, ion channels and in vitro models	Bai Leung
Sept. 20	Lecture on Chronic models of temporal lobe epilepsy Seminars on epilepsy & excitatory synaptic transmission (2 papers)	Leung
Sept. 27	Lecture on intrinsic ion channels and epilepsy Seminars on epilepsy & inhibitory synaptic transmission (2 papers)	Leung
Oct. 4	Lecture on ion channel genetics, epilepsy and anticonvulsants Review.	Leung
Oct. 11	(study week)	
Oct. 18	Midterm examination	Leung/Bai
Oct. 25	Lecture on calcium-release activated calcium (CRAC) channels and related diseases, immune deficiency and cerebellar ataxia	Lu
Nov. 1	Seminars on CRAC channels (2 papers)	Lu
Nov. 8	Seminars on CRAC channels (1 papers) Lecture: Review of CRAC channels	Lu
Nov. 15	Lecture on Gap Junction and Diseases	Bai
Nov. 22	Lecture: class discussion Seminars on gap junction disease (1 papers)	Bai
Nov. 29	Seminars on gap junction disease (2 paper)	Bai
Dec. 6	Seminar on gap junction disease (1 paper) Lecture on structure and gating and Review	Bai
TBA	Final examination (Dec. 10-21)	

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: See page 1 (bottom)

OWL: updated course information will be posted on OWL

Students with OWL issues should see: <https://owl.uwo.ca/portal/site/owldocs>

3. Course Syllabus: See page 1-2

4. Course Materials: Textbook: no

5. Evaluation:

Evaluation of student performance will include a midterm test (30%), marks for presentation (25%), a summary of the presentation (5%), and a final examination (40%). The midterm test and final examination will consist of essay and short-answer style questions.

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

Electronic devices will not be allowed during examinations.

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/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf”

“All required paper summaries 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

Documentation is required for either medical or non-medical academic accommodation, such documentation must be submitted by the student directly to the appropriate Faculty Dean`s/Academic Counselling office and not to the instructor. It will be the Dean`s/Academic Counselling office that will determine if accommodation is warranted.

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:

Documentations are required for non-medical absences from midterms or late submission of paper summaries. The documentation must be submitted by the student directly to the appropriate Dean`s/Academic Counselling Office and **not** to the instructor. It will subsequently be the Dean`s/Academic Counselling Office that will determine if accommodation is warranted.

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.