

Pathology 3700G

Modern Approaches in Biomedical and Pathology Research

Syllabus

Syllabus 2020 Course Coordinator:

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1. COURSE DESCRIPTION:

This course focuses on various modern research approaches, model systems, experimental designs, and analytical methods used to study human disease and the underlying cellular, genetic, and molecular mechanisms.

The course will use contemporary learning tools and a variety of evaluation and assessment methods. Examples will be taken from major diseases such as cancer and neurodegenerative disorders.

For a list of the topics to be covered see the Lecture Schedule.

Prerequisite(s):

Biochemistry 2280A and registration in a BMSc degree.

Pre-or Corequisite(s):

Pathology 3500 or the former Pathology 3240A; Physiology 3120 or 3140A

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.

2. LEARNING OUTCOMES:

COURSE GOAL:

At the end of this course, students will have a comprehensive understanding of modern research approaches, experimental designs, model organism, and analysis tools in biomedical and pathological research with a focus on cancer and neurodegenerative diseases.

OBJECTIVES:

Students will be able to:

- Differentiate between clinical and basic research, understand the value, contributions, and limitations of both.
- Critically analyze the use, opportunities, and limitations of model organisms in biomedical research; understand and critically evaluate experimental design, data analysis, and interpretation of results.
- Critically analyze the use, opportunities, and limitations of genetic, pathological, and computational analyses, in biomedical research. Acquire a detailed understanding of procedures and protocols, trouble shooting, and critical evaluation of results and interpretations.
- Analyze and critically evaluate original research literature; develop skills to find, evaluate, critically evaluate, and properly use information from different on-line sources.
- Critically discuss ethical issues regarding the use of genetic analyses, use of animals, and more in biomedical research – present an informed opinion.
- Develop written and oral presentation skills;
- Develop communication skills to discuss new concepts and opposing opinions with peers in direct interactions and online communication tools.
- Understand opportunities, expectations, and challenges associated with careers in biomedical research in general and also for the students own individual career plans.

3. COURSE MATERIALS:

LECTURE NOTES, ARTICLES, WEB PAGES, VIDEOS ETC.:

These will be posted to OWL for each lecture. Summaries (Powerpoint slides, text, tables) for each lecture will also be posted on OWL.

Students are encouraged to bring their own laptop computers to class. In addition, computer work terminals will be provided to each student for usage during class.

TEXT:

There is no required text (or textbook) for this course.

4. EVALUATION

Evaluation will be based on different student contributions (essays, oral presentations, participation etc.), as detailed below:

Component	% of Final Mark
Group presentation	20%
Essay 1	15%
Essay 2	15%
Participation in classroom discussions	10%
Participation in online discussion	10%
Short ad hoc presentation of career in biomedical research	10%
In class exam 1	10%
In class exam 2	10%

5. 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

6. SIMILARITY REVIEW SOFTWARE

Essay and all other contribution should be independent products and not copied or plagiarized from other sources. Sources should be referenced and cited whenever required. This may be reviewed using the appropriate software.

7. ABSENCE FROM COURSE COMMITMENTS**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

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 Dean's 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 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 Dean's 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:

http://www.uwo.ca/sci/undergrad/academic_counselling/resources_and_self_service/forms.html

Please note that the format of a make-up exam is at the discretion of the course manager.

ABSENCE FOR NON-MEDICAL REASONS:

Absences presentations or assignments will be permitted for compassionate reasons. However, documentation is required and must be submitted by the student directly to the instructor. The instructor will determine if accommodation is warranted.

SPECIAL EXAMINATIONS:

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean 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.

To provide an opportunity for students to recover from the circumstances resulting in a Special Examination, the University has implemented Special Examinations dates. These dates as well as other important information can be found at the following link:

http://www.uwo.ca/univsec/pdf/academic_policies/exam/definitions.pdf

EVALUATION OF UNDERGRADUATE ACADEMIC PERFORMANCE

At least one week prior to the deadline for withdrawal from a course without academic penalty, students will receive assessment of work accounting for at least 15% of their final grade. Please see the lecture and evaluation schedule for more details.

8. ADDITIONAL INFORMATION/STATEMENTS

STATEMENT ON USE OF ELECTRONIC DEVICES

Tablets and computers are permitted in the lectures/learning sections only. For examinations, students may only bring pencils, pens and erasers. No other material or electronic devices are permitted unless otherwise stated prior to the test/examination.

STATEMENT ON ROUNDING OF MARKS

Across the Basic Medical Sciences Undergraduate Education programs, we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. Final grades on this course will be rounded up to the next whole integer, e.g. a 73.5 becomes a 74 and marks WILL NOT be bumped to the next grade or GPA, e.g. a 79 will NOT be rounded up to an 80, an 84 WILL NOT be rounded up to an 85, etc. The mark attained is the mark you achieved and the mark assigned; requests for mark “bumping” will be denied.

COPYRIGHT STATEMENT

Course material produced by faculty is copyrighted and to reproduce this material for any purposes other than your own educational use contravenes Canadian Copyright Laws.

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.

9. 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/>

Appeal Procedures:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/appealsundergrad.pdf

Students that are in emotional/mental distress should refer to Mental Health@Western.

Please check

<http://www.uwo.ca/uwocom/mentalhealth/>

for a complete list of options how to obtain help.