1. Course Information

Anatomy and Cell Biology 4429a
“Advanced Medical Cell Biology”

Fall Term 2018 Session – Information and Schedule

Course description

The study of the molecules and functions common to mammalian cells, the specializations that make differentiated cells distinct, and the diseases that result from the dysregulation or loss of these cellular functions. The lectures will cover cellular organization, biogenesis of organelles, growth and differentiation from an experimental perspective. The tutorials will consist of seminars by invited speakers on topics in cell biology with a medical relevance. These tutorials will demonstrate the approaches used to answer questions in the field of experimental cell biology.

Place and Time:  
Lectures: Monday 9:30 – 10:30, room DSB 2016  
Wednesday 9:30 – 10:30, room DSB 2016  
Seminars: Friday 9:30 – 10:30, DSB 2016 (DSB 3008 until Oct 5th)

Antirequisite: The former A/CB 329b.
Prerequisite: Biology 3316a or Physiol 3140a, with a minimum mark of 70%.

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 will 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. Instructor Information

Course Director: Dr. Paul Walton  
Room 474 Medical Sciences  
Telephone x86825  
(pwalton@uwo.ca)
3. Course Syllabus

10 September Introduction

12 September Protein Folding and Chaperones

14 September Seminar: Introduction

17 September Protein Folding Diseases (Chaudhuri and Paul 2006)

19 September Regulated Proteolysis (Mayer, 2000; Ciechanover 2004; Walter and Ron, 2011)

21 September Seminar: Dr. Patrick Lajoie (DSB 3008)

24 September Antibodies

26 September Case Study – Cystic Fibrosis (Rowe et al., 2005)

28 September Seminar: Dr. Dale Laird (DSB 3008)

01 October Secretory pathway (Bowers, 1998)

03 October Alzheimer’s Disease (Dickson 2004; Blennow et al 2006)

05 October Seminar: none (Barr Lecture)

08 October Thanksgiving holiday

10 October Reading Week

12 October Seminar: Reading Week (DSB 2016 - hereafter)

15 October Prion Proteins (Harris and True 2006)

17 October In vitro import, mitochondria

19 October Seminar: Paul Walton

22 October Yeast systems, peroxisomes

24 October Hypercholesterolemia

Assignment due

26 October Seminar: Dr. Stephen Renaud

29 October Gene Therapy (Somia and Verma, 2000; Gao et al. 2008)

31 October Viruses and Oncogenes

02 November Seminar: Dr. Cheryle Seguin

05 November Cell Cycle

07 November Cellular Differentiation (Le Grand and Rudnicki 2007)

09 November Seminar: Dr. Silvia Penuela

12 November Apoptosis

14 November Senescence

16 November Seminar: Dr. Trevor Shepherd

19 November Wound repair (Shaw and Martin, 2009; Elliot and Hamilton, 2011)

21 November Stem Cells (Okita and Yamanaka 2010)

23 November Seminar: Dr. David Litchfield

26 November Cancer (Hanahan and Weinberg, 2000; 2011)

28 November Cancer Expression Profiles (Liotta and Petricoin, 2000)

30 November Seminar: Dr. Alison Allan

03 December Metastasis (Polyak and Weinberg, 2009)

05 December Angiogenesis (Hanahan and Weinberg, 2000; 2011)

07 December end of classes
4. Course Materials

Scientific review articles, seminar articles and class notes (to be placed in WebCT):
Students are expected to have read the relevant course-material before coming to classes.

Optional textbooks:

5. Evaluation:

An assignment, due Wednesday, October 24th, will act as a midterm mark and be worth 30% of the final course mark.

The final examination will consist of a short answer component, and will cover all of the material contained in the lectures and tutorials. The final exam will be held in the scheduled examination period and will constitute 70% of the final course mark. The schedule for this final examination is TBA.

Assignment:

Each student will be required to write a report on a topic to be selected from one of the general topics presented as one of the lectures (e.g. Gene Therapy). The topic selected, with a few introductory notes, should be submitted and approved by the instructor during the week of September 24th.

The report should consist of:

1) a summary of the particular area of medically related cell biology
2) an important, unresolved question that is derived from the previous work
3) a Hypothesis and experiments designed to answer that question.

The report is limited to five standard pages (not including references) of double-spaced, 12 point type, contained within 1 inch margins. This restriction is designed to promote a clear and concise description of the topic, question, and experiments. Reports that do not conform to these standards will be assigned a mark of zero.

In addition to the paper-copy of the final report, students must submit an electronic-version of the report, as an uncompressed Microsoft Word (or equivalent) file. This material will be used for plagiarism checking and in case a question of authenticity should arise; it will not be used in the marking of the assignment.
The report should be handed in by, **2:00 pm, Wednesday, October 24th 2018**. Late submissions will be accepted, but will be penalized at a rate of 20% per day. No submissions will be accepted after 2:00 pm, Monday October 29th 2017.

**Policy on Rounding and Bumping of Grades**
Across the Basic Medical Sciences Undergraduate Education programs and within the department of Anatomy and Cell Biology 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, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be bumped to the next grade or GPA, e.g. a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved and the mark assigned; requests for mark “bumping” will be denied.
(http://www.schulich.uwo.ca/bmsc/academic_resources/policies_and_procedures/index.html)

**6. Additional Information/Statements**

**Absence from course commitments**

A. **Absence for medical illness:**
Students must familiarize themselves with the Policy on Accommodation for Medical Illness:
https://studentservices.uwo.ca/secure/index.cfm

B. **Absence for non-medical reasons:**
Documentation is required, such documentation must be submitted by the student directly to the appropriate academic counseling unit for your home faculty and **not** to the instructor. It will subsequently be the academic counseling unit that will determine if accommodation is warranted.

C. **Special Examinations**
A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the appropriate academic counseling unit for your home 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 appropriate academic counseling unit for your home faculty. They will consult with the instructor and Department Chair and, if a later date is arranged, will communicate this to Registrarial Services. 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 appropriate academic counseling unit for your home faculty 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.

**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 Web site:

**Plagiarism:** Students must write their essays and assignments in their own words. Whenever students take an idea, or passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar).

**Plagiarism Checking:** The University of Western Ontario uses software for plagiarism checking. Students will be required to submit their written work in electronic form for plagiarism checking. “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).”

Support Services:

Please contact the course instructor if you require material in an alternate format or if any other arrangements can 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. Students that 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.

Registrarial Services: http://www.registrar.uwo.ca
Academic Counselling (Science and Basic Medical Sciences): http://www.uwo.ca/sci/counselling/index.html
USC Student Support Services: http://westernusc.ca/service
Student Development Services: http://www.sdc.uwo.ca
Student Health Services: http://www.shs.uwo.ca/