

## 1. Course Information

### Anatomy and Cell Biology 3329B “Medical Cell Biology”

#### Winter Term 2023 Session – Information and Schedule

##### NOTICE:

**Due to the uncertainty regarding undergraduate teaching during the Winter Term 2023, the syllabus for ACB3329b may be altered as the situation changes. If you are registered for this course, the Announcements section of the OWL site will have the most current information regarding time and teaching modalities, and will be updated as information becomes available.**

##### 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: Tuesday 10:30 – 11:30, DSB 3008  
Thursday 9:30 – 10:30, DSB 3008  
Seminars: Wednesday 9:30 – 10:30, DSB 3008

**Antirequisite:** The former A/CB 4429A.

**Prerequisite:** Biology 2382B; Biology 2290F/G, with a minimum mark of 70%.

## 2. Instructor Information

**Course Director:** Dr. Paul Walton      Room 474 Medical Sciences Bldg.  
telephone x86825      (pwalton@uwo.ca)

### 3. Course Syllabus

10 January	Introduction	28 February	Viruses and Oncogenes
11 January	<u>Seminar</u> : Introduction	01 March	<u>Seminar</u> : Dr. Stephen Renaud
13 January	Protein Folding and Chaperones	02 March	<b><i>In Class Test</i></b>
17 January	Protein Folding Diseases (Chaudhuri and Paul 2006)	07 March	Cell Cycle
18 January	<u>Seminar</u> : Dr. Patrick Lajoie	08 March	<u>Seminar</u> : Dr. Arthur Brown
19 January	Regulated Proteolysis (Mayer, 2000; Ciechanover 2004; Walter and Ron, 2011)	09 March	Cellular Differentiation (Le Grand and Rudnicki 2007)
24 January	Antibodies	14 March	Apoptosis <b><i>Assignment due</i></b>
25 January	<u>Seminar</u> : Dr. Dale Laird	15 March	<u>Seminar</u> : Brooke O'Donnell
26 January	Secretory pathway (Bowers, 1998)	16 March	Senescence
31 January	Case Study – Cystic Fibrosis (Rowe et al., 2005; Gadsby et al. 2006)	21 March	Wound repair (Shaw and Martin, 2009; Elliot and Hamilton, 2011; Dolberg et al. 1985; Martins-Green et al. 1994)
01 February	<u>Seminar</u> : Dr. Shawn Whitehead	22 March	<u>Seminar</u> : Dr. Silvia Penuela
02 February	Alzheimer's Disease (Dickson 2004; Blennow et al. 2006)	23 March	Stem Cells (Okita and Yamanaka 2010)
07 February	Prion Proteins (Harris and True 2006)	28 March	Cancer (Hanahan and Weinberg, 2000; 2011)
08 February	<u>Seminar</u> : Dr. Krishna Singh	29 March	<u>Seminar</u> : Dr. Trevor Shepherd
09 February	<i>In vitro</i> import, mitochondria	30 March	Cancer Expression Profiles (Liotta and Petricoin, 2000)
14 February	Yeast systems, peroxisomes	04 April	Metastasis (Polyak and Weinberg, 2009)
15 February	Seminar: Dr. Paul Walton	05 April	<u>Seminar</u> : <i>not today</i>
16 February	Gene Therapy (Somia and Verma, 2000; Gao et al. 2008)	06 April	Angiogenesis (Hanahan and Weinberg, 2000; 2011)
21 February	<i>Reading Week</i>	10 April	<i>classes end</i>
22 February	<u>Seminar</u> : <i>Reading Week</i>		
23 February	<i>Reading Week</i>		

## 4. Course Materials

**Scientific review articles, seminar articles and class notes** (to be placed in OWL):

*Students are expected to have read the relevant course-material before attending classes.*

Optional textbooks:

- “Molecular Cell Biology” Lodish et al. 8<sup>th</sup> edition, 2016. W.H. Freeman Co.
- “The Biology of Cancer” Weinberg, R.A. 2<sup>nd</sup> edition, 2013. Garland Science.

## 5. Evaluation:

At the beginning of each Wednesday Seminar, students will hand-in a **written comment** on the provided research paper (**1% each; 9% in total**). The subject of the comments will vary from week to week and may include summaries of the **main objective** of the paper, **experimental plan** and **conclusions**, describing the **hypothesis** or determining the **strengths and weaknesses** of the paper. Each written comment should be approximately ½ page, double-spaced.

An **in-class examination** will consist of a **short answer** component, and will cover all of the material contained in the lectures and tutorials until that date. The exam will be held on **Thursday, March 2<sup>nd</sup>, between 9:30 – 10:30am** and will constitute **25%** of the final course mark.

An **assignment**, due **Tuesday, March 14<sup>th</sup>**, will act as a midterm mark and be worth **33%** 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 during the scheduled examination period and will constitute **33%** 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 January 24<sup>th</sup>**.

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.

The report will be uploaded to the **Assignments** section of the OWL site. Authenticity will be examined using the Turnitin feature.

The report should be handed in by: **2:00 pm, Tuesday, March 14<sup>th</sup>**. 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, Friday, March 17<sup>th</sup> 2022.

## 6. Additional Information/Statements

### Course delivery with respect to the COVID-19 pandemic

Although the intent is for this course to be delivered in-person, the changing COVID-19 landscape may necessitate some or all of the course to be delivered online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will not change. Any assessments affected will be conducted online as determined by the course instructor.

#### 1. 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](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

#### 2. Turnitin and other detection software

All assignments will 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 Western University and Turnitin.com (<http://www.turnitin.com>).

#### 3. Absence from course commitments

A. Absence for medical illness:  
Students must familiarize themselves with the [Accommodation for Illness Policy](#).

A student seeking academic accommodation for any **work worth less than 10%** must contact the instructor or follow the appropriate Department or course specific instructions provided on the course outline. Instructors will use good judgment and ensure fair treatment for all students when considering these requests. You are not required to disclose details about your situation to your instructor; documentation is not required in this situation, and you should not send any pictures to your instructor.

If you are unable to meet a course requirement for any **work worth 10% or greater** due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Academic Counseling 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. Please note that the format of a make-up test, exam, or assignment is at the discretion of the course coordinator.

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/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf)

B. Absence for non-medical reasons:  
Student absences might also be approved for non-medical reasons such as religious holidays and compassionate situations. Please review the policy on [Accommodation for Religious Holidays](#). All non-medical requests must be processed by Academic Counselling. Not all absences will be approved; pay attention to the academic calendar and final exam period when booking any trips.

## 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 about examinations and academic standing can be found at the following link: [http://www.uwo.ca/univsec/pdf/academic\\_policies/exam/definitions.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/exam/definitions.pdf)

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see [http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)).

### Policy on re-marking:

This course employs a **24/7 rule** on the re-marking of written assignments and examinations. In this course we emphasize the importance of constructive feedback to improve on one's performance. As such, your instructor and your teaching assistant spend a lot of time evaluating your work and trying to give meaningful feedback.

The **24/7 rule** means that you are **not** to contact your instructor within **24 hours** of receiving your feedback if you would like a re-mark. This is so that you have 24 hours to thoroughly go through your feedback and reflect on your performance on the assignment. If you would like a re-mark of your assignment, you then must contact your instructor **within 7 days** of receiving your feedback.

Your entire assignment will be re-marked, blindly, by the instructor or teaching assistant who did not initially mark your work. The new mark will "stick" regardless of whether your mark has increased, decreased, or stayed the same in comparison to your original mark. Your newly marked paper will also have additional comments to help with future assignments. Any requests for a grade revision on an assignment outside of the **24/7 rule** will be denied.

## 4. Additional academic policies and statements

### Accessibility Statement and Support Services

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 Accessibility Services (SAS) at 661-2111 x 82147 for any specific question regarding an accommodation or review. The policy on Accommodation for Students with Disabilities can be found at the following link: [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic%20Accommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf)

Students who are in emotional/mental distress should refer to Mental Health@Western ([http://www.health.uwo.ca/mental\\_health](http://www.health.uwo.ca/mental_health)) for a complete list of options about how to obtain help.

### 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."

### Cell Phone and Electronic Device Policy

The Schulich School of Medicine & Dentistry is committed to ensuring that testing and evaluation are undertaken fairly across all our departments and programs. For all tests and exams, it is the policy of the School that any electronic devices, i.e., cell phones, tablets, cameras, or iPod are strictly prohibited. These devices **MUST** be left either at home or with the student's bag/jacket at the front of the room and **MUST NOT** be at the test/exam desk or in the individual's pocket. Any student found with one of these prohibited devices will receive a grade of zero on the test or exam. Non-programmable calculators are only allowed when indicated by the instructor. The program is not responsible for stolen/lost or broken devices.

### Copyright and Audio/Video Recording 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. You must always ask permission to record another individual and you should never share or distribute the recording.

### Correspondence Statement

In accordance with the policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner. You can read about the privacy and security of the UWO email accounts [here](#).

## **Discovery Credit Statement**

Students are permitted to designate up to 1.0 Discovery Credit course (or equivalent) for pass/fail grading that can be counted toward the overall course credits required for their degree program. The details of this policy and the deadlines can be found [here](#).

## **BMSUE Academic Policies and Statements**

### **Cell Phone and Electronic Device Policy (for in-person tests and exams)**

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### **Rounding of Marks Statement**

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, 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.

## **Support Services**

The following links provide information about support services at Western University.

[Academic Counselling \(Science and Basic Medical Sciences\)](#)

[Appeal Procedures](#)

[Registrarial Services](#)

[Student Development Services](#)

[Student Health Services](#)