Although this academic year might be different, Western University is committed to a **thriving campus**. We encourage you to check out the [Digital Student Experience](https://www.uwo.ca/health/) website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: [https://www.uwo.ca/health/](https://www.uwo.ca/health/).

1. **Technical Requirements:**
   - Stable internet connection
   - Laptop or computer
   - Working microphone
   - Working webcam

2. **Course Overview and Important Dates:**
   - **Delivery Mode** | **Dates** | **Time**
   - In person via on-line | Mondays | 12:30-2:30 pm
   - | Wednesdays | 10:30-11:30 am

   *Details about design and delivery of the course are listed below in Section 4*

<table>
<thead>
<tr>
<th>Classes Start</th>
<th>Reading Week</th>
<th>Classes End</th>
<th>Study day(s)</th>
<th>Exam Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 4</td>
<td>Feb. 15-19</td>
<td>April 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   * November 12, 2020: Last day to drop a first-term half course or a first-term full course without penalty*

3. **Contact Information**

   **Course Coordinator** | **Contact Information**
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Dale W. Laird</td>
</tr>
</tbody>
</table>

   **Instructor(s) or Teaching Assistant(s)** | **Contact Information**
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Silvia Penuela</td>
</tr>
<tr>
<td>Dr. Patrick Lajoie</td>
</tr>
<tr>
<td>Dr. Nathalie Berube</td>
</tr>
</tbody>
</table>
4. Course Description and Design

This course focuses on cell specialization, the cell biology of aging and cell signaling. Students will also be trained in effective grant writing, abstract writing and scientific presentations focusing on a Nobel Laureate.

Prerequisite(s): Biology 3316A/B or Physiology 3140A (minimum mark of 70%)  
or Biology 3309 (minimum mark of 75%)  
Co-requisite(s): none  
Anti-requisite(s): none

<table>
<thead>
<tr>
<th>Mode</th>
<th>Dates</th>
<th>Time</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual synchronous</td>
<td>Monday</td>
<td>12:30-2:30 pm</td>
<td>Weekly</td>
</tr>
<tr>
<td></td>
<td>Wednesday</td>
<td>10:30-11:30 pm</td>
<td>Weekly</td>
</tr>
<tr>
<td>Virtual asynchronous</td>
<td>N/A</td>
<td>As requested</td>
<td>Weekly</td>
</tr>
</tbody>
</table>

- Asynchronous pre-work must be completed prior to relevant synchronous sessions
- Attendance at synchronous sessions is required
- Missed work should be completed within 48 hours
- A recording may be provided for some synchronous sessions at the discretion of the instructor
- Closed captioning will be provided on audio or video recordings as requested

All course material will be posted to OWL: [http://owl.uwo.ca](http://owl.uwo.ca). Any changes will be indicated on the OWL site and discussed with the class.

If students need assistance, they can seek support on the [OWL Help page](http://owl.uwo.ca). Alternatively, they can contact the [Western Technology Services Helpdesk](mailto:helpdesk@uwo.ca). They can be contacted by phone at 519-661-3800 or ext. 83800.

[Google Chrome](http://www.google.com) or [Mozilla Firefox](http://www.mozilla.org) are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](http://www.speedtest.net).

5. Learning Outcomes

**Overview of Course:** This advanced experimental cell biology courses is targeted primarily to senior cell biology students and is designed to be taken after ACB4410, but ACB 4410A is not a required prerequisite. Collectively, these two courses will be taught in 6 units (3 per term). These courses have three objectives: a) to present students with current information and the state of knowledge in specific area(s) of cell biology from the viewpoint of experimental research and discovery, and b) to teach students research skills on how to review, criticize, write, discuss and present experimental results.

**Introduction to the course:** Dr. Laird
A: Cell Signaling and Human Disease: Dr. Lajoie (~4 weeks)
a) Ligands, signals, receptors and relationship to human health
b) Stress response pathways and protein folding diseases
c) Studying human diseases in model organisms
Research Skill = Students will be expected to research and present the pathway leading to a scientist being awarded the Nobel Prize

B: Cell biology of aging and senescence: Dr. Berube (~4 weeks)
a) Cell senescence
b) Telomere attrition and nuclear architecture
c) Nutrient sensing and autophagy
Research skill = Students will be expected to organize data into effective abstracts for inclusion as part of a research paper

C: Cell Specialization: Dr. Penuela (~4 weeks)
a) Models of cell differentiation in skin and adipose tissue
b) Stem cell biology
c) Transgenic approaches to cell specialization
d) Cellular reprogramming and cell specialization
Research skill = Students will be expected to write a short research grant proposal on an assigned topic.

Upon successful completion of this course, students will be able to:
• Discuss how protein misfolding can lead to disease
• Understand how animal and cell models are used to investigate diseases
• Discuss features and genetic changes that occur to cells as they age
• Understand how cells specialize to meet specific tissue needs
• Communicate research discoveries of Nobel Laureates
• Understand the basics of abstract and grant writing

6. Course Content and Schedule

Introduction: Introduction to the course (Laird)
Monday January 4th (2 hours)

Module 1: Cell Signaling and Human Diseases (Lajoie)
Begin: Wednesday Jan 6th and finished Monday Feb. 1st (4 Wed, 4 Mon)
Research Skill: Presentation of Nobel Laureates
Test: take home

Module 2: Cell Senescence and Aging (Berube)
Begin: Wednesday Feb. 3rd and finished: Monday March 8th (4 Wed, 4 Mon)
Research Skill: Abstract writing
Reading week: Feb 15-19
Test: Time test

Module 3: **Cell Specialization (Penuela)**
Begin: Wednesday March 10th and finished Monday April 5th (4 Wed, 4 Mon)
Research Skill: Oral Presentation + Grant Writing + journal club discussion

Test: Take home Last day of class is April 5th

7. **Online Participation and Engagement**

- ✔️ Students are expected to participate and engage with all synchronous content
- ✔️ Students can participate by asking questions about asynchronous content
- ✔️ Students can also participate by interacting in the forums with their peers and instructors as requested

8. **Evaluation**

<table>
<thead>
<tr>
<th>Component Mark</th>
<th>Date Mark Available</th>
<th>% of Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 intra-term Modules of equal weighting</td>
<td>~2nd week of; February</td>
<td>33.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>March</td>
</tr>
<tr>
<td></td>
<td></td>
<td>April</td>
</tr>
</tbody>
</table>

Further details on the marking scheme for each module will be provided at the beginning of each module.

**Final exam:** none
All assignments are due at the times specified by the Instructor

Written assignments will be submitted to Turnitin (statement in policies below)

Students will have unlimited submissions to Turnitin

Rubrics will be used to evaluate assessments and made available at the discretion of the Instructor

After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator; to ensure a timely response, reach out within 7 days

Click here for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>90-100</td>
<td>One could scarcely expect better from a student at this level</td>
</tr>
<tr>
<td>A</td>
<td>80-89</td>
<td>Superior work which is clearly above average</td>
</tr>
<tr>
<td>B</td>
<td>70-79</td>
<td>Good work, meeting all requirements, and eminently satisfactory</td>
</tr>
<tr>
<td>C</td>
<td>60-69</td>
<td>Competent work, meeting requirements</td>
</tr>
<tr>
<td>D</td>
<td>50-59</td>
<td>Fair work, minimally acceptable</td>
</tr>
<tr>
<td>F</td>
<td>below 50</td>
<td>Fail</td>
</tr>
</tbody>
</table>

Information about late or missed evaluations:

Late assessments without illness self-reports will be subject to a late penalty at the discretion of the Instructor

Late assessments with illness self-reports should be submitted within 24 hours of submission of the last illness self-report

An assessment cannot be submitted after it has been returned to the class; an alternate assessment will be assigned

If a make-up assessment is missed, the student will receive an INC and complete the task the next time the course is offered

9. Communication:

Students should check the OWL site every 24 – 48 hours

Course updates will be provided on the OWL announcements as needed

Emails will be monitored daily; students will normally receive a response in 24 – 48 hours

This course will use ZOOM for synchronous sessions

This course will use the OWL forum for discussions

Students should post all course-related content on the discussion forum so that everyone can access answers to questions

The discussion forums will be monitored daily/weekly by instructors or teaching assistants
10. Office Hours:

- Office hours will be held remotely via Zoom on an appointment basis
- Students will be able to sign up for an appointment using email

11. Resources

- All resources will be posted in OWL

12. Professionalism & Privacy:

Western students are expected to follow the Student Code of Conduct. Additionally, the following expectations and professional conduct apply to this course:

- Students are expected to follow online etiquette expectations provided on OWL
- All course materials created by the instructor(s) are copyrighted and cannot be sold/shared
- Recordings are not permitted (audio or video) without explicit permission
- Any permitted recordings are not to be distributed
- Students will be expected to take an academic integrity pledge before some assessments

13. How to Be Successful in this Class:

Students enrolled in this class should understand the level of autonomy and self-discipline required to be successful.

1. Invest in a planner or application to keep track of your courses. Populate all your deadlines at the start of the term and schedule time at the start of each week to get organized and manage your time.
2. Make it a daily habit to log onto OWL to ensure you have seen everything posted to help you succeed in this class.
3. Take notes as you go through the lesson material. Treat this course as you would a face-to-face course. Keeping handwritten notes or even notes on a regular Word document will help you learn more effectively than just reading or watching the videos.
4. Connect with others. Try forming an online study group and try meeting on a weekly basis for study and peer support.
5. Do not be afraid to ask questions. If you are struggling with a topic, check the online discussion boards or contact your instructor(s) and or teaching assistant(s).
6. Reward yourself for successes. It seems easier to motivate ourselves knowing that there is something waiting for us at the end of the task.

14. Western Academic Policies and Statements

Absence from Course Commitments

Policy on Academic Consideration for Student Absences
If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a self-reported absence or via the Academic Counselling unit. Students have two self-reports to use throughout the academic year; absence from course commitments including tests, quizzes, presentations, labs, and assignments that are worth 30% or less can be self-reported. Self-reported absences cover a student for 48 hours (yesterday + today or today + tomorrow). Your instructor will receive notification of your consideration; however, you should contact your instructor immediately regarding your absence. Students are expected to submit missed work within 24 hours of the end of the 48-hour period. Please review details of the university’s policy on academic consideration for student absences.

If you have used both their self-reported absences or will miss more than 48 hours of course requirements, a Student Medical Certificate (SMC) should be signed by a licensed medical or mental health practitioner and you should contact academic counselling. Academic Counselling will be operating virtually this year and can be contacted at scibmsac@uwo.ca.

Accommodation for Religious Holidays

The policy on Accommodation for Religious Holidays can be viewed here.

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 here.

Academic Offenses

“Scholastic offences are taken seriously, and students are directed here to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence.

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 Accessible Education (AE) at 661-2111 x 82147 for any specific question regarding an accommodation or review The policy on Accommodation for Students with Disabilities.

Correspondence Statement

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.

Turnitin and other similarity review 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. Students will be able to view their results before the final submission. 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.

15. BMSUE Academic Policies and Statements

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 recordings.

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.

16. Support Services

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

- Academic Counselling (Science and Basic Medical Sciences)
- Appeal Procedures
- Registrial Services
- Student Development Services
- Student Health Services