

Department of Biochemistry
MOLECULAR GENETICS HUMAN CANCER 4450A
Course Syllabus for Fall 2023



Western University is committed to a **thriving campus**; therefore, your health and wellness matter to us! The following link provides information about the resources available on and off campus to support students: <https://www.uwo.ca/health/> Your course coordinator can also **guide you** to resources and/or services should you need them.

1. Technical Requirements:



Stable internet connection



Laptop or computer

2. Important Dates:



Classes Begin	Reading Week	Classes End	Study day(s)	Exam Period
September 7	October 30– November 5	December 8	December 9	December 10–22

* November 13, 2023: Last day to drop a first-term half course without penalty

** September 29, 2023 is National Day for Truth and Reconciliation and is a non-instructional day

3. Contact Information



Course Coordinator	Contact Information
Mike Hallett	Michael.Hallett@uwo.ca

Instructor(s) or Teaching Assistant(s)	Contact Information
P. Hu	Phu49@uwo.ca
C. Schild Poulter	Cschild-poulter@robarts.ca
K. Lu	Klu92@uwo.ca
T. Andrews	tallulandrews@gmail.com
T. Gebregiworgis	tgebregi@uwo.ca

4. Course Description and Design

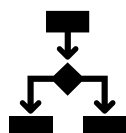
Delivery Mode: in-person

Specific genes, processes and cellular responses are routinely mutated in cancer. This subverts normal cellular physiology creating characteristic alterations called ‘hallmarks’ that enable these cells to fuel the development of cancer. This course focuses on these underlying processes that alter gene function - and the functional pathways they affect - across a diverse range of cancers.

By the end of this course, you will have:

- ☒ an understanding of the hallmarks of cancer and their underlying genes and processes;
- ☒ the capacity to evaluate new reports and breakthroughs in cancer in a sound scientific manner;
- ☒ a conceptual understanding of how cancer model systems and clinical samples have been investigated both traditional assays and also modern “systems biology” approaches;
- ☒ the capacity to explore cancer-related databases and models;
- ☒ the ability to offer opinions and exhibit theoretical understanding of novel treatment scenarios;
- ☒ the skills to communicate technical concepts and experimental results to diverse audiences.

Biology 2581b, Biochemistry 3381 or Pathology 3500



Timetabled Sessions

Component	Date(s)	Time
All lectures		
Coordinator office hours		

- ☒ Attendance at sessions is required
- ☒ Readings must be completed before lectures.
- ☒ Recordings cannot be guaranteed for lectures nor for speakers.
- ☒ All essential course material will be posted to OWL <http://owl.uwo.ca>

All course material will be posted to OWL: <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](#). Alternatively, they can contact the [Western Technology Services Helpdesk](#). They can be contacted by phone at 519-661-3800 or ext. 83800.

[Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](#).

5. Learning Outcomes

Upon successful completion of this course, students will be able to:



- Demonstrate a critical understanding of recent breakthroughs and advances in our understanding of the causation and treatment of multiple types of cancer. Students will be able to understand and evaluate news reports and new breakthroughs reported in the popular press in proper scientific context.
- Interpret and explain detailed, current knowledge about the molecular mechanisms and abnormalities responsible for cancer development.
- Critically evaluate diverse information sets related to cancer; offer opinions and exhibit theoretical understanding of novel treatment scenarios.
- Clearly communicate technical concepts and experimental results to diverse audiences in writing, in a style consistent with practice in the field.

6. Course Content and Schedule



Week	Dates	Topic	Instructor
1	Sept 7–10	Fundamental biology/genetics of cells (review)	M. Hallett
2	Sept 11–17	Cellular oncogenes & growth factors	M. Hallett
3	Sept 18–24	Tumor suppressors & Genomic maintenance	M. Hallett
4	Sept 25–Oct 1	Immortalization & Tumorigenesis	M. Hallett
5	Oct 2–8	Genomic instability & Heterotypic interactions	M. Hallett
6	Oct 9–15	Metastases & Tumor immunology	M. Hallett
7	Oct 16–22	Speaker 1	TBA
8	Oct 23–Oct 29	Midterm (in class 1 hour) & Speaker 2	TBA
9	Oct 30–Nov 5	Reading Week	N/A
10	Nov 6–12	Speaker 3	TBA
11	Nov 13–19	Speaker 4	TBA
12	Nov 20–26	Speaker 5	TBA
13	Nov 27–Dec 3	Speaker 6	TBA
14	Dec 4–8	Speaker 7	TBA

7. Participation and Engagement





- ☒ Students are expected to participate and engage with content as much as possible
- ☒ Students can also participate by interacting in the forums with their peers and instructors

8. Evaluation

Below is the evaluation breakdown for the course. Any deviations will be communicated.

Assessment	Format	Weighting	Due Date
Early quiz (in class)	Short answer	10	Sept. 26
Midterm (in class)	Short answer	20	Oct. 24
Assignment	Research problem	20	Nov. 1
Project	Research format	20	Dec. 1
Final	Varied	30	TBA

- ☒ 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 will be posted with the instructions.
- ☒ 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.
- ☒ A grade appeal should be done in writing. It should consist of a short paragraph that states the rationale for why the grade is not correct. Include a picture or document of the question, your original response and the grading.
- ☒ Any grade appeals on assignments, quizzes, or midterm must be received within 3 weeks of the grade being posted.
- ☒ The dates for all projects, quizzes, exams and midterms are listed in here. The OWL syllabus is the official dates.
- ☒ Quizzes, midterms and final are all closed-book.



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.

90-100	One could scarcely expect better from a student at this level
80-89	Superior work which is clearly above average
70-79	Good work, meeting all requirements, and eminently satisfactory
60-69	Competent work, meeting requirements
50-59	Fair work, minimally acceptable
below 50	Fail

Information about late or missed evaluations:

- ☒ Each day late will remove 5% from the grade of the exercise.
- ☒ If there is a late submission of either the assignment or project by more than one week, they will contribute at most 5% to the overall grade (not 20%).
- ☒ If you miss the Quiz, your overall grade will be out of 90.

- ☒ If you miss the midterm, your final exam will be worth $30 + 20 = 50\%$.
- ☒ The assignment, project and final exam must be completed by all students to pass the course.

INC (Incomplete Standing): If a student has been approved by the Academic Counselling Office (in consultation with the instructor/department) to complete term work at a later date, an INC will be assigned. Students with INC will have their course load in subsequent terms reduced to allow them to complete outstanding course work. Students may request permission from Academic Counselling to carry a full course load for the term the incomplete course work is scheduled.

SPC (Special examination): If a student has been approved by the Academic Counselling Office to write a Special Examination and the final exam is the only outstanding course component, an SPC will be assigned. If the class has a makeup exam, the student is expected to write the makeup exam. If the class doesn't have a makeup exam or the student misses the makeup exam for reasons approved by the Academic Counselling Office, the student will write the exam the next time the course is offered. Outstanding SPCs will reduce the course load for the term the exam is deferred as outlined in [Types of Examinations](#) policy.

9. Communication:



- ☒ Students should check the OWL site every 24–48 hours
- ☒ Students should OWL or our unofficial Slack channel (<http://cancer-uwo.slack.ca>) These will be monitored daily; students will receive a response in 24–48 hours
- ☒ This course will use Slack and forum for discussions
- ☒ Students should post all course-related queries on the discussion forum so that everyone can access the questions and responses

10. Office Hours:



- ☒ Office hours will be held in person with the coordinator (Mike Hallett) Tuesdays 4-5pm.
- ☒ Office hours will be drop-in.
- ☒ Office hours will be individual or group depending on the type of questions received and the number of people present.

11. Resources



- ☒ All resources will be posted in OWL
- ☒ Required textbook R. Weinberg, The Biology of Cancer (3rd edition is preferable)

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:

- ☒ All course materials created by the instructor(s) are copyrighted and cannot be sold/shared (e.g., Must Knows Facebook group, Course Hero, Chegg, etc.)
- ☒ You must ask the speaker for permission to record lectures.
- ☒ Permitted recordings are not to be distributed

Western is committed to providing a learning and working environment that is free of harassment and discrimination. All **students**, staff, and faculty have a role in this commitment and have a responsibility to ensure and promote a safe and respectful learning and working environment. Relevant policies include Western's [Non-Discrimination/Harassment Policy](#) (M.A.P.P. 1.35) and [Non-Discrimination/Harassment Policy – Administrative Procedures](#) (M.A.P.P. 1.35).

Any **student**, staff, or faculty member who experiences or witnesses' behaviour that may be harassment or discrimination **must report the behaviour** to the Western's [Human Rights Office](#). Harassment and discrimination can be human rights-based, which is also known as EDI-based, (sexism, racism, transphobia, homophobia, islamophobia, xenophobia, antisemitism, and ableism) or non-human rights-based (personal harassment or workplace harassment).

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 your time throughout the course.
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. Follow weekly checklists created on OWL or create your own to help you stay on track.
4. Take notes as you go through the lesson material. Keeping handwritten notes or even notes on a regular Word document will help you learn more effectively than just reading or watching the videos.
5. Connect with others. Try forming an online study group and try meeting on a weekly basis for study and peer support.
6. 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).
7. 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

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

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.

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 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](#).

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](#).

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

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

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, e.g., cell phones, tablets, cameras, smart glasses, smart watch 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 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., 74.45 becomes 74, and 74.50 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.

Statement on the use of ChatGPT and other Artificial Intelligence (AI) Platforms

Go for it. You must cite any tool that you used. Almost always, the response provided by these tools are not optimal, but it is a good place to start answering a question. You must always cite the source of statements made. For example, if ChatGPT says "all cats are grey", you are required to provide a citation to a document where this statement is proven.

16. Support Services

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

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

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

[Appeal Procedures](#)

[Registrarial Services](#)

[Student Development Services](#)

[Student Health Services](#)