Schulich MEDICINE & DENTISTRY

Western Science

Bachelor of Medical Sciences (BMSc) Program

Department of Pathology and Lab Medicine

Pathology 4850G - Genomic Data Analysis

Course Outline for Winter 2026

This course takes place at Western University, which is located on the traditional territories of the Anishinaabek, Haudenosaunee, Lūnaapéewak, and Chonnonton Nations, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum.

Students who are in emotional and/or mental distress should refer to https://www.uwo.ca/health/ for a complete list of options about how to obtain help.

1. Technical Requirements:


Stable internet connection


Laptop or computer


Working microphone


Working webcam

2. Important Dates:

Classes Begin	Reading Week	Classes End	Study day(s)	Exam Period
January 5	February 14–22	April 9	April 10, 11	April 12–30

January 13, 2026: Last day to add or drop a Winter 12-week course
March 30, 2026: Last day to withdraw from a Winter 12-week course without academic penalty

3. Contact Information

Course Coordinator	Contact Information
Dr. Parisa Shooshtari	

Instructor(s) or Teaching Assistant(s)	Contact Information

4. Course Description and Design

Delivery Mode: [blended]

Basics of data analysis and visualization using the R statistical programming language with a main focus on next generation sequencing (NGS) data. Topics include: fundamentals of NGS technologies; data formats and structures of sequencing data; effective analysis of different types of sequencing data (RNAseq, ATAC-seq and ChIP-seq) using R.

Prerequisite(s): Biology 2581A/B; one of Biology 2244A/B, Statistical Sciences 2244A/B, Statistical Sciences 2858A/B; and registration in Year 4 of a BMSc, BHSc or BSc degree.

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.

Timetabled Sessions

Component	Date(s)	Time
Lectures (**Virtual Asynchronous**)	The lecture videos should be watched before the computational labs on Fridays.	
Computational Lab (**In-Person**)	Fri	12:30-2:30 PM
Office Hours (**Virtual Synchronous**)	Thurs	3:00-4:00 PM

Mode	Dates and Time	Frequency
Blended: (1) Virtual asynchronous (**VA**) lectors (2) **in-person** computational labs (3) virtual synchronous (**VS**) office hours	Two Lectures (**VA**) Fridays: 12:30-2:30 pm (Computational Lab) (**In-person**). Office Hours (**VS** either by TA or instructor) • Thursdays: 3:00-4:00 pm <u>Important Notes:</u> **Lecture:** The course materials including pre-recorded videos for two lectures per week, and the individual weekly assignments are released every Monday at 12:01 am. **Weekly Assignment:** Students have one week (until Sunday 11:55 pm) to finish and submit their individual weekly assignments. The individual weekly assignments will be counted toward a total of 35% of the final grades. **Team-Based Computer Lab Assignments:** The computer labs on Fridays will be in person on campus. In-person attendance in computer lab sessions is required. During the computer labs, team-based assignments will be shared by the students, where students work on one assignment in a team. The team-based assignments should be submitted by the end of	weekly

	the computer lab session (i.e., 2:30 pm on Fridays). This will be counted toward a total of 10% of the final grades. Accommodations are required if the student is missing a computer lab. **Those who do not attend the computer lab will receive a mark 0 for the corresponding computer lab assignment. The students are expected to have finished the lecture videos before attending the Computational Labs on Fridays.** **Office Hours:** The students can come to the office hours on to ask their questions about lectures or assignments. Please note that there will be one extra office hour on the last week of classes in **VS** mode to answer students' questions related to their independent project. **Final Presentation:** Please note that the final project presentation on April 7th and April 9th 2026 will be held either **in-person** or **VS.** Depending on the number students, we may need to have extra hours on the same day or the other days for the final project presentations. This will be communicated on OWL Brightspace.	

- ☑ Asynchronous pre-work must be completed prior to sessions
- ☑ Attendance at sessions is required
- ☑ Missed work should be completed within 24 hours
- ☑ A recording of the lectures for asynchronous sessions will be available on OWL site on the same week of the course
- ☑ Questions should be directed through the Forum on OWL. Questions should be asked at the latest 2 days prior to assignments due dates and at least 3 days before the final project due dates.

All course material will be posted to OWL Brightspace: https://westernu.brightspace.com/d2l/login. Any changes will be indicated on the OWL Brightspace site and discussed with the class.

If students need assistance, they can seek support on the OWL Brightspace Help. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Current versions of all popular browsers (e.g., Safari, Chrome, Edge, Firefox) are supported with OWL Brightspace; what is most important is that you update your browser frequently to ensure it is current. All JavaScript and cookies should be enabled.

5. Learning Outcomes

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

- Develop codes and scripts in R for the analysis of biological data (R, Rstudio and R Bioconductor)
- Analyze and visualize data using R
- Explain fundamentals of next generation sequencing technologies
- Recognize different structures and formats of next generation sequencing data
- Effectively analyze RNA sequencing data
- Effectively analyze Assay of Transposase Accessible Chromatin Sequencing (ATAC-seq) data
- Effectively analyze Chromatin Immunoprecipitation Sequencing (ChIP-Seq) data

6. Course Content and Schedule

All lectures will be delivered in virtual asynchronously (**VA**) mode. Computer Lab sessions are **in-person**, and the attendance is mandatory.

Materials of all sessions of each week will become available on Mondays of the same week at 12:01 am. This includes lecture videos and related texts and the weekly assignments.

There are two types of assignments for this course:

Weekly Assignments: Weekly assignments are released on Mondays at 12:01 am. Students will have one week to work on the weekly assignments. The deadline for submitting their assignments is on Sundays at 11:55 pm.

Computer Lab Assignments: Just before the computer labs start (Fridays at 12:30 pm), team-based assignments will be released on OWL. Students will make teams and work on this type of assignment together during the computer labs. They will submit their results by the end of the session (Friday at 2:30 pm) on OWL. One submission per group will be sufficient, where names of the students in the group and their contributions will be reported. Please watch the recorded lectures of the week, before coming to the computer labs.

During the Computer Lab hours on Fridays, student can also ask their questions as relates to the weekly assignments and/or lecture videos.

The final project presentation in April 7th and April 9th 2026 will be either virtual synchronous (**VS)** or **in-person**.

The instructor and/or the teaching assistant will provide office hours in the format of Q&A sessions to answer questions of the students in a virtual synchronous **(VS)** format.

Week	Dates	Topic	Instructor
1	Jan 5–11	Introduction to R	Dr. Parisa Shooshtari
2	Jan 12–18	Data Formats and Data Processing in R	Dr. Parisa Shooshtari
3	Jan 19–25	Data Visualization in R	Dr. Parisa Shooshtari
4	Jan 26–Feb 1	Fundamentals of NGS Technologies and Data Formats	Dr. Parisa Shooshtari
5	Feb 2–8	RNA-seq Data Analysis	Dr. Parisa Shooshtari
6	Feb 9–15	RNA-seq Data Analysis (cont.)	Dr. Parisa Shooshtari
7	Feb 16–22	Reading Week (starts February 14th 12:01 AM)	N/A
8	Feb 23–Mar 1	RNA-seq Data Analysis (cont.)	Dr. Parisa Shooshtari

9	Mar 2–8	ATAC-seq Data Analysis	Dr. Parisa Shooshtari
10	Mar 9–15	ATAC -seq Data Analysis (cont.)	Dr. Parisa Shooshtari
11	Mar 16–22	CHIP-seq Data Analysis	Dr. Parisa Shooshtari
12	Mar 23–29	CHIP -seq Data Analysis (cont.)	Dr. Parisa Shooshtari
13	Mar 30–Apr 5	Final Project	Dr. Parisa Shooshtari
14	Apr 6–9	Presentations of Final Projects (April 7th and 9th, 2026)	Dr. Parisa Shooshtari

7. Participation and Engagement

- ☑ Students are expected to participate and engage with content as much as possible
- ☑ Students can participate during in-person computer lab sessions and VS office hours. Computer labs are interactive, where students can work in teams during the lab.
- ☑ Students can participate on OWL Brightspace forums after watching the recording
- ☑ Students can participate by interacting on OWL Brightspace forums with their peers and the TAs

8. Assessment and Evaluation

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

Assessment	Due Date	Weighting	Flexibility
Individual Weekly Assignments	Weekly	35%	Drop lowest 1
Team-Based Assignments During the Computer Labs	Weekly	10%	Drop lowest 1
Proposal of Independent Project	Feb 27th	10%	72-hour no late penalty
Presentation of Independent Project	April 7 and 9th	15%	Not applicable
Final Report of Independent Project	April 13th	30%	Not applicable

Designated Assessment: Instructors are permitted to designate one assessment per course per term as requiring supporting documentation to receive academic consideration. See below for information on academic consideration policy and missed course work. For this course the following assessment has been designated as requiring supporting documentation:

- Final Report of Independent Project; Due Date is April 13th, 2026.

Information about flexibility in assessment

- ☑ Flexibility in assessment has been applied to this course; therefore, academic consideration requests may be denied on the assessments where flexibility is included
- ☑ This course has 11 individual weekly assignments with only 10/11 assignments counted towards your final grade. Academic consideration will not be granted for missed assignments. Students will receive a grade of zero for any missed individual assignments within the required 10 assignments.
- ☑ This course has 11 team-based computer lab assignments with only 10/11 assignments counted towards your final grade. Academic consideration will not be granted for missed assignments.

Students will receive a grade of zero for any missed team-based assignments within the required 10 assignments.

- ☑ This course employs flexible deadlines for the Proposal of the Independent Project. The proposal deadline can be found above in the course outline. Students are expected to submit the proposal by the deadline listed. Should illness or extenuating circumstances arise, students are permitted to submit their proposal up to 72 hours past the deadline without a late penalty. Should students submit their proposal beyond 72 hours past the deadline, a late penalty of 20% per day will be subtracted from the assessed grade. Requests for academic consideration supported by documentation must be submitted within 48 hours of the original deadline. The instructor reserves the right to deny such academic considerations, given the deadline flexibility provided. If you have a long- term academic consideration or an accommodation for disability that allows greater flexibility than provided here, please reach out to your instructor at least one week prior to the posted deadline.

General information about assessments

- ☑ All assignments are due at **11:55 pm EST** unless otherwise specified
- ☑ Students are responsible for ensuring that the correct file version is uploaded; incorrect submissions including corrupt files could be subject to late penalties (see below) or a 0
- ☑ Written assignments will be submitted to Turnitin (statement in policies below)
- ☑ Students will have [unlimited OR #] submissions to Turnitin
- ☑ Rubrics will be used to evaluate assessments and will be posted with the instructions
- ☑ A student might not receive the same grade as their group members if it is determined that the distribution of work was not equal
- ☑ 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
- ☑ Assessment re-grading could result in the mark, increasing, decreasing, or remaining the same
- ☑ Prior to the filing of a written request for relief, students must attempt to resolve the concern regarding a mark or grade through informal consultation with the instructor. If the student is dissatisfied with the decision of the instructor or does not receive a decision from the instructor, a written request for relief must be submitted to the Department Chair within three (3) weeks from the date that the mark was issued.

The table below outlines the University-wide grade descriptors.

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

Information about late or missed assessments:

- ☑ Late assessments without academic consideration will be subject to a late penalty 20 %/day.
- ☑ For the proposal of the independent project, a flexibility of 72 hours have been provided (please see the table above). The late proposal submissions beyond 72 hours will be subject to a late penalty of 20% per day.
- ☑ For the oral presentation and written report of the independent project, the late assessments without accommodation will be subject to a late penalty of 20% per day.
- ☑ An assessment cannot be submitted after it has been returned to the class.
- ☑ A make-up test will not be offered, and the weight of a missed test will be transferred to the final examination.

- ☑ The computer lab assignments (both individual and team-based assignments) and the final project (proposal, oral presentation and written report) must be completed to pass the course.
- ☑ Only one special examination (see below) will be offered in January.

INC (Incomplete Standing): If a student has been approved by the Academic Advising Office (in consultation with the instructor/department) to complete term work at a later date, an INC will be assigned, which could impact program progression. 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 Advising 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 Advising 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 for the final exam or the student misses the makeup for the final exam for reasons approved by the Academic Advising Office, the student will write the exam the next time the course is offered, which could impact program progression. Outstanding SPCs will reduce the course load for the term the exam is deferred as outlined in Definitions of Types of Examinations policy.

Information about flexibility in assessment

- ☑ Flexibility in assessment has been applied to this course; therefore, academic consideration requests may be denied on the assessments where flexibility is included
- ☑ This course has 11 individual weekly assignments with only 10/11 assignments counted towards your final grade. Academic consideration will not be granted for missed assignments. Students will receive a grade of zero for any missed individual assignments within the required 10 assignments.
- ☑ This course has 10 team-based computer lab assignments with only 9/10 assignments counted towards your final grade. Academic consideration will not be granted for missed assignments. Students will receive a grade of zero for any missed team-based assignments within the required 9 assignments.
- ☑ This course employs flexible deadlines for the Proposal of the Independent Project. The proposal deadline can be found above in the course outline. Students are expected to submit the proposal by the deadline listed. Should illness or extenuating circumstances arise, students are permitted to submit their proposal up to 72 hours past the deadline without a late penalty. Should students submit their proposal beyond 72 hours past the deadline, a late penalty of 20% per day will be subtracted from the assessed grade. Requests for academic consideration supported by documentation must be submitted within 48 hours of the original deadline. The instructor reserves the right to deny such academic considerations, given the deadline flexibility provided. If you have a long- term academic consideration or an accommodation for disability that allows greater flexibility than provided here, please reach out to your instructor at least one week prior to the posted deadline.

General information about assessments

- ☑ All assignments are due at **11:55 pm EST** unless otherwise specified
- ☑ Students are responsible for ensuring that the correct file version is uploaded; incorrect submissions including corrupt files could be subject to late penalties (see below) or a 0
- ☑ 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

- ☑ A student might not receive the same grade as their group members if it is determined that the distribution of work was not equal
- ☑ 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
- ☑ Any grade appeals on assignments, proposals, or final projects must be received within 3 weeks of the grade being posted.

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.

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

Information about late or missed assessments:

- ☑ Late submission of individual and team-based assignments without academic consideration will result in a mark of zero.
- ☑ For the proposal of the independent project, a flexibility of 72 hours have been provided (please see the table above). The late proposal submissions beyond 72 hours will be subject to a late penalty of 20% per day.
- ☑ For the oral presentation and written report of the independent project, the late assessments without accommodation will be subject to a late penalty of 20% per day.
- ☑ An assessment cannot be submitted after it has been returned to the class.
- ☑ The computer lab assignments (both individual and team-based assignments) and the final project (proposal, oral presentation and written report) must be completed to pass the course.

INC (Incomplete Standing): If a student has been approved by the Academic Advising 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 Advising 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 Advising 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 Advising 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.

☒ **Weekly assignments – 35%**

Students will be required to complete assignments related to each weekly session. **Students will be required to submit weekly assignments in OWL Brightspace by Sunday of the same week at 11:55 pm**. The assignments are mostly lab practical assignments, but could also include short answers. For the practical assignments, students are required to write R scripts to analyze and/or visualize the data.

Please note the following important points. There are 11 weekly assignments for this course. Students are expected to complete 10 out of the 11 assignments. Each weekly assignment counts for 3.5% of the final grade (for a total of 35%). The SRA policy has been removed in this academic year. Instead, we offer some flexibility by letting students select 10 out of 11 individual assignments (See the

Flexibility column on the above table). **Please note that some assignments may depend on each other.** This means that you will need to finish one assignment before you can continue with the next one. This is particularly the case for the three RNA-seq lab assignments. The same is true for the two ATAC-seq labs assignments; and for the two ChIP-seq labs assignments. Please consider this when choosing your 10 out of 11 assignments. Also, please keep in mind NOT to delete the files that you generate in one RNA-seq lab, as you may need them for the next RNA-seq lab (similar holds true for the ATAC-seq and ChIP-seq labs).

☒ **Team-Based Assignments During the Computer Labs – 10%**

Students are expected to participate and engage with content as much as possible. To encourage participations and team works, students will make groups during the computer labs, and work on their team-based assignments during the two-hour computer lab sessions. The team-based assignments will be released on **Fridays at 12:30 pm, and are expected to be submitted by Fridays at 2:30 pm**. There are a total of 10 team-based weekly assignments. Students are expected to complete 10 out of the 11 team-based assignments. Each team-based assignment counts for 1% of the final grade (for a total of 10%). The SRA policy has been removed in this academic year. Instead, we offer some flexibility by letting students select 10 out of 11 team-based assignments (See the Flexibility column on the above table).

☒ **Proposal of the Independent Project – 10%**

Students are required to submit a one-page draft of their proposed independent project by 11:55 pm of the deadline. In their proposal, they need to explain the specific problem they will address, how they will obtain the required data (mostly form publicly available datasets) and what analysis steps they will perform. The main purpose of submitting a brief proposal is to receive feedback from the instructor on project suitability and feasibility.

☒ **Presentation (15%) and Final Report (30%) of the Independent Project – Total of 45%**

For the independent project, the students need to (a) obtain sequencing data from human, mice or other organisms; (b) analyze their data using the techniques they have learned throughout the course; (c) submit a written report in the form of a short scientific paper detailing the analysis steps and results; and (d) present their project orally in a 15 minutes presentation. The final report of the independent project should be submitted by 11:55 pm of the deadline.

There is a huge amount of sequencing data available in public domains (e.g., ENCODE, Roadmap Epigenome Project, TCGA, GTEx, etc.). Students are expected to download a dataset that is relevant to their project. However, if the student has obtained some unpublished sequencing data samples through working with a research lab and is interested in analyzing those samples, they are welcome to do so.

☒ **How to submit your work?**

All assignments and project materials (team-based weekly assignments during the computer labs, weekly assignments, project proposals and final report of independent project) are to be submitted on OWL Brightspace website.

☒ **Due Dates/Times**

- Each individual weekly assignment will be due on Sundays at 11:55 pm, unless indicated otherwise by the instructor.
- Each team-based weekly assignment will be due on Fridays at 2:30 pm, unless indicated otherwise by the instructor.

- The proposal of the independent project will be due on Feb 27th, 2026 at 11:55 pm.
- The oral presentation of the independent project will take place on April 7th, and April 9th 2026 at 12:30-2:30 pm.

The final written assignment (report of the independent project) will be due April 13th, 2026 at 11:55 pm.

9. Communication

- ☑ Students should check the OWL Brightspace site every 24–48 hours
- ☑ Students should email their instructor(s) and teaching assistant(s) using email.
- ☑ Emails will be monitored [daily]; students will receive a response in 24–48 hours
- ☑ This course will use discussions on Brightspace.
- ☑ Students should post all course-related queries on the discussion forum so that everyone can access the questions and responses.
- ☑ The discussion forums will be monitored 3 times per week by the teaching assistants.

10. Office Hours

- ☑ Office hours will be held remotely using Zoom on Thursdays from 3:00 pm to 4:00 pm
- ☑ Students will be able to sign up for an appointment using email
- ☑ Multiple students can attend office hours at the same time to ask their questions. Office hour sessions are NOT recorded, so that the students feel more comfortable asking their questions.

11. Course Materials

- ☒ All materials will be posted on OWL Brightspace
- ☐ Required textbook
- ☐ Required study guide
- ☐ Additional resources

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/upload (e.g., Must Knows Facebook group, Course Hero, Chegg, ChatGPT, etc.)
- ☑ Recordings are not permitted (audio or video) without explicit permission
- ☑ Permitted recordings are not to be distributed
- ☑ Students will be expected to take an academic integrity pledge before some assessments.

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 Brightspace to ensure you have seen everything posted to help you succeed in this class.
3. Follow checklists created on OWL Brightspace 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/Procedures and Statements

A. Absence from Course Commitments

Medical, Compassionate, or Extenuating Circumstances

Students missing course work for medical, compassionate, or extenuating circumstances can request academic consideration by completing a request at the central academic consideration portal. Students are permitted one academic consideration request per course per term **without** supporting documentation. Note that supporting documentation is **always** required for academic consideration requests for examinations scheduled by the office of the registrar (e.g., December and April exams) and for practical laboratory and performance tests (typically scheduled during the last week of the term).

Students should also note that the instructor may **designate** one assessment per course per term that requires supporting documentation. This designated assessment is described elsewhere in this document. Academic consideration requests may be denied when flexibility in assessment has already been included. Examples of flexibility in assessment include when there are assessments not required for calculation of the final grade (e.g. 8 out of 10 quizzes) or there is flexibility in the submission timeframe (e.g. 72 hour no late penalty period).

Please note that any academic considerations granted in this course will be determined by the instructor of this course, in consultation with the academic advisors in your Faculty of Registration, in accordance with information presented in this course syllabus. Supporting documentation for academic considerations for absences due to illness should use the Student Medical Certificate or, where that is not possible, equivalent documentation by a health care practitioner.

Policy: Academic Consideration – Undergraduate Students in First Entry Programs
Procedures: Student Medical Certificate

Religious Holidays

Students should review the policy for Accommodation for Religious Holidays (Appendix 1). Where a student will be unable to write examinations and term tests due to a conflicting religious holiday, they

should inform their instructors as soon as possible but not later than two weeks prior to writing the examination/term test. In the case of conflict with a midterm test, students should inform their instructor as soon as possible but not later than one week prior to the midterm.

Policy: Accommodation for Religious Holidays

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.

Policy: Definitions of Types of Examinations

B. Academic Appeals and Scholastic Offenses

Students can file a **request for relief from academic decisions** if the request is based on one or more grounds listed in the policy. Requests for relief generally fall into three categories, which are also listed in the policy. All requests for relief must be supported by evidence. A request for relief from academic decisions process was formally referred to as an appeal. Refer to the policy and procedures about further details and timelines.

Policy: Requests for Relief from Academic Decisions
Procedures: Undergraduate Student Academic Requests for Relief

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

Policy: Scholastic Offences
Procedures: Undergraduate Scholastic Offences

Students may **appeal** some academic and scholastic disciplinary decisions by a Dean or their designate, to the Senate Review Board Academic (SRBA).

Policy: Senate Review Board Academic Appeals
Procedures: Senate Review Board Academic Appeals

C. 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.

Policy: Academic Accommodation for Students with Disabilities

D. 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.

E. 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.

Policy: Undergraduate Course Credit
Procedures: Discovery Credits

F. Essay Course Guidelines

The guidelines for the minimum written assignments refer to the cumulative amount of written work, including examinations. An essay course must normally involve total written assignments (essays or other appropriate prose composition) as follows:

- Full course (1000 to 1999): at least 3000 words
- Half course (1000 to 1999): at least 1500 words
- Full course (2000 and above): at least 5000 words
- Half course (2000 and above): at least 2500 words

and must be so structured that the student is required to demonstrate competence in essay writing to pass the course. The structure of the essay course must be such that in order to pass the course, the student must exhibit some minimal level of competence in essay writing and the appropriate level of knowledge of the content of the course.

Policy: Course Numbering Policy, Essay Courses, and Hours of Instruction

G. Statement on the Use of Generative Artificial Intelligence (AI)

Within this course, students are permitted to use AI tools exclusively for information gathering and preliminary research purposes. These tools are intended to enhance the learning experience by providing access to diverse information sources. However, it is essential that students critically evaluate the obtained information, exercise independent thinking, and engage in original research to synthesize and develop their own ideas, arguments, and perspectives. The use of AI tools can serve as a starting point for exploration, with students expected to uphold academic integrity by appropriately attributing all sources and avoiding plagiarism. Assignments and/or lab reports should reflect the students' own thoughts and independent written work. By adhering to these guidelines, students contribute to a responsible and ethical learning environment that promotes critical thinking, independent inquiry and allows them to produce original written contributions.

H. Turnitin and other similarity review software

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 Western University and Turnitin.com.

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

15. BMSUE Academic Policies and Statements

A. 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 and this will be documented as a Scholastic Offence. Non-programmable calculators are only allowed when indicated by the instructor. The program is not responsible for stolen/lost or broken devices.

B. Copyright and Audio/Video Recording Statement

Course materials produced by faculty are 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.

C. 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*** in this course are rounded to the nearest whole number based on the first decimal place. For example, a grade of 74.49 or lower will be rounded to 74, whereas 74.50 or higher will be rounded to 75.

Marks WILL NOT be arbitrarily increased to the next grade or GPA, e.g., a 79 will NOT be increased to an 80, and 84 WILL NOT be increased to an 85, etc. The mark attained is the mark you achieved, and the mark assigned; requests for arbitrary mark increasing will be denied. Marks will be assigned based on assessments in the syllabus and no extra work or tasks will be assigned to increase a mark.

Course grade rounding provisions, as described above, differ from cumulative and term averages. Cumulative and term averages will be calculated to two decimal places and rounded to the nearest whole number with .45 rounded up, for the purposes of admission to and progression in modules, scholarship retention, and Dean's Honour List.

Policy: Marks/Grades; Definitions of Grades; Grading Scale for Undergraduate Students

16. Support Services

Students who are in emotional/mental distress should refer to Mental Health @Western https://www.uwo.ca/health/ for a complete list of options about how to obtain help.

Statement on Gender-Based and Sexual Violence

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 the following website:

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.

Other important links:

- Academic Advising (Science and Basic Medical Sciences)
- Learning Development and Success
- Office of the Registrar
- Wellness & Wellbeing
- Western USC Services

Appendix 1: Western University Academic Policies and Procedures

The policies and procedures listed in this syllabus are outlined in the table below. In some cases, a policy does not include an accompanied procedures document.

Academic Policy	Name of Policy/Procedure	Links
General Policy	Marks/Grades; Definitions of Grades; Grading Scale for Undergraduate Students	Policy
General Policy	Structure of the Academic Year	Policy
Registration, Progression, Graduation	Course Numbering Policy, Essay Courses, and Hours of Instruction	Policy
Registration, Progression, Graduation	Undergraduate Course Credit	Policy • Procedures
Examinations	Definitions of Types of Examinations	Policy
Examinations	Evaluation of Academic Performance	Policy
Examinations	Examination Conflicts	Policy
Rights and Responsibilities	Academic Accommodation for Students with Disabilities	Policy
Rights and Responsibilities	Accommodation for Religious Holidays	Policy
Rights and Responsibilities	Policy on Academic Consideration – Undergraduate Students in First Entry Programs	Policy • Procedures
Rights and Responsibilities	Requests for Relief from Academic Decisions (Undergraduate)	Policy • Procedures
Rights and Responsibilities	Requests for Relief from Academic Decisions (Graduate)	Policy • Procedures
Rights and Responsibilities	Scholastic Offences (Undergraduate)	Policy • Procedures
Rights and Responsibilities	Senate Review Board Academic Appeals	Policy • Procedures