

**Medical Biophysics**  
**MEDBIO 4970E**  
Course Syllabus for Fall/Winter 2022



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



Working microphone



Working webcam

2. **Important Dates:**



Classes Begin	Reading Week	Classes End	Study day(s)	Exam Period
September 8	October 31– November 6	December 8	December 9	N/A

\* November 30, 2022: Last day to drop a first-term full course without penalty

Classes Resume	Reading Week	Classes End	Study day(s)	Exam Period
January 9	February 18-26	April 10	April 11-12	N/A

3. **Contact Information**



Course Coordinator	Contact Information
Dr Mamadou Diop	mdiop@uwo.ca

Instructor(s) or Teaching Assistant(s)	Contact Information
Kelly Hatch (Library Staff)	X80968
Marianne Suwalski	msuwalsk@uwo.ca
Yanghao (Jerry) Fu	yfu296@uwo.ca

## 4. Course Description and Design

**Delivery Mode:** in-person

Major laboratory and tutorial course in experimental/theoretical biophysics for students registered in an Honors Specialization in Medical Biophysics (Medical Science or Physical Science Concentration). The main components are (1) a major research project (topic and advisor chosen in consultation with the student) and (2) scientific communication (student presentations and reports). The students will work on the research project from September to March and present their results as a research paper (thesis) and public seminar. *Students are required to present the results of their work at the Medical Biophysics Undergraduate Research Conference held during the Alan C. Burton Day.*

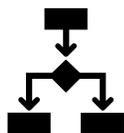
**Antirequisite(s):**

Medical Biophysics 4971E.

**Prerequisite(s):**

Medical Biophysics 3970Z and registration in Year 4 of one of the following Honors Specialization modules: Medical Biophysics (Medical Science Concentration), Medical Biophysics (Physical Science Concentration), or Medical Biophysics (Biological Science Concentration).

**Extra Information:**



Students are expected to spend a minimum of 15 hours per week working on their research project.

**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 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 if you are dropped from a course for failing to have the necessary prerequisites.

**Timetabled Sessions**

Component	Date(s)	Time
Fall & Winter terms	Monday	9:30-11:30 in MSB 193CD
Winter term only (Jan-April)	Wednesday	10:30-13:30 in MSB-282

- Asynchronous pre-work must be completed [ days] prior to sessions
- Attendance at sessions is required
- Missed work should be completed within 24 hours

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:



- Compile a literature review based on primary literature and develop a rationale and motivation for a research project. Work independently or collaboratively on a research project and at its conclusion, explain the methods, results, and discuss the meaning of the research project in relation to existing peer-reviewed literature through the writing of a scientific report in journal manuscript format (“the thesis”).
- Demonstrate independent technical expertise for lab procedures (general or field-specific) and record study/experimental details in a clear, rigorous, and repeatable manner.
- Present research work clearly and accessibly to a variety of audiences, through short pitches, seminar-length oral presentations, and as a scientific poster.

## 6. Course Structure

### Required Activities:

There are four main components to this course:

1. An individual research project in the laboratory of a faculty member.
2. Regularly scheduled in class lectures/workshops.
3. Attendance at departmental seminars (Mondays at 9:00am).
4. Completion of additional assignments.

### Research Project:

Students will be responsible for finding a research project and supervisor. Supervisors must have a faculty appointment in the Department of Medical Biophysics. Preference should be given to professors who have submitted projects that appear on the resources/projects page.

If a student has arranged to work with a specific supervisor who has not submitted a project description, then the student and supervisor must provide a project description for approval within 1 week of the first class/other specified deadline. Please send the project description to the course instructor by email (please cc the course TA).

As part of their research project, each student is required to complete assignments and presentations related to their research.

## Classes:

This portion of the course will emphasize critical analysis and communication in science. Students will meet throughout the year at assigned times for instruction and practice in these aspects of scientific research. The following activities (in no particular order) will take place during scheduled class-time:

1. Introduction to course syllabus
2. Instruction on using library resources and performing a literature search
3. Instruction on how to complete a laboratory notebook.
4. Presentation on Graduate Studies, followed by Q&A.
5. Instruction on how to write scientifically for a general audience
6. Instruction on how to write scientifically in journal manuscript format (“thesis”).
7. Instruction on how to present short presentations (3-minute thesis, “Quick Pitch”).
8. Instruction on how to present seminar-length presentations (7–12-minute duration),
9. Instruction on how to prepare and present a scientific poster.
10. Instruction on how to prepare an abstract for a research manuscript.
11. Presentation of Quick Pitch
12. Presentation of Mini Seminar
13. Presentation of final seminar

## Assignments:

Assignments consist of exercises relating to literature search techniques and organization of references.

## 7. Course Materials

There is no single text that encompasses the material in the course. Students should have a hard-bound laboratory notebook. This may be provided by the research lab or alternatively must be purchased for all record keeping in the lab.

## 8. Participation and Engagement



- Students are expected to participate and engage with content as much as possible
- Students can participate during lectures, seminars, and class discussions
- Students can also participate by interacting in the forums with their peers and instructors

## 9. Evaluation

A summary of each evaluation is detailed below. In brief, students will be evaluated by their supervisor on their performance in the laboratory. This will include not only technical skills, but also their familiarity with the scientific literature and their contribution to the experimental design, analysis, and interpretation of the data. This evaluation will be done at two times during the academic year. The first evaluation will be done at the end of the first term and is designed to inform the student on his/her progress to date. The second evaluation will be done at the end of the second term. We will provide you with the marking sheet so that you may see the evaluation criteria.

For written work, all assignments will be evaluated by the course teaching assistant. The scientific paper (“thesis”) will be evaluated by teaching assistant and the course coordinator (see table below for details). Peer evaluations may be utilized for earlier draft versions of the paper submitted throughout the year, to help you improve your writing. Please note that the supervisors will not assist you in writing your thesis. Students will be evaluated on their written assignments and oral presentations throughout the year by the course coordinator, teaching assistant, and potentially other faculty involved. Feedback will be given to students as soon as possible after presentations.

All written work, including the final scientific paper (thesis), must be submitted electronically through OWL. Hard copies of the paper will not be required.

Student participation in the oral presentation sessions is expected. Attendance at all activities (including workshops) is required. If you are unable to attend a session, the usual University requirements for absence apply (see Section 14) and you should inform both the course coordinator and instructor as soon as possible. Failure to attend classes and workshops will result in a reduction in the participation and attendance mark.

<b>Activity</b>	<b>Weight</b>	<b>Evaluator(s)</b>	<b>Deadline</b>
Annotated Bibliography	1%	Teaching assistant(s)	Oct 3 <sup>rd</sup> noon
Written Research Proposal/Project Plan	4%	Teaching assistant(s)	Oct 10 <sup>th</sup> noon
Library Resources Assignment	5%	Teaching assistant(s) and Library Staff	Oct 24 <sup>th</sup> noon
Quick Pitch	5%	Teaching assistant(s)	Nov 21 <sup>st</sup>
Thesis Draft 1	2.5%	2 Peer reviewers	Jan 16 <sup>th</sup> noon
Abstract	4%	Teaching assistant(s)	Feb 13 <sup>th</sup> noon
Mini Seminar	6%	Teaching assistant(s) & Course Coordinator	Week of Feb 27 <sup>th</sup>
Thesis Draft 2	2.5%	2 Peer reviewers	Mar 6 <sup>th</sup> noon
Research Paper (Thesis)	20%	Teaching assistant(s) and Course Coordinator	Mar 22 <sup>nd</sup> noon
Final Seminar to Department	10%	Teaching assistant(s), Course Coordinator, faculty	Week of Mar 27 <sup>th</sup>
Data Submission to Lab Supervisor	--	--	March 31 <sup>st</sup> noon
Poster (Undergraduate Research Day/AC Burton Day)	5%	Teaching assistant(s)	TBA
Oral Examination	10%	Teaching assistant(s) and Course Coordinator	Apr 3 <sup>rd</sup>
Lab Performance (Term 1)	10%	Supervisor	N/A
Lab Performance (Term 2)	10%	Supervisor	N/A
Attendance & Participation	5%	Teaching assistant(s)	N/A

*\*\*The department and course coordinator/instructor reserve the right to make adjustment to the grading scheme and scheduled deadlines if deemed necessary\*\**

## Information about late or missed evaluations and academic misconduct

- Late reports, presentations, and assignments will be subject to a late penalty of 20% for each 24h period or fraction thereof after the due date (e.g., reports submitted a few minutes after the deadline will be penalized 20%). Penalties can only be avoided with official academic accommodation.
- In addition, properly following instructions on each assignment submission is very important. This includes submitting assignments in the correct location, formatting the assignment correctly, as well as other details which will be clearly outlined for each assignment. A deduction of 10% from the assignment will be applied for not adhering to instructions.
- In the event a student has been involved in academic misconduct (e.g., plagiarism) with respect to a report, presentation or assignment, the student will receive a grade of zero for the report, presentation or assignment and be subject to UWO penalties for academic misconduct (see below).

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

## 10. Communication

- Students should check the OWL site every 24–48 hours
- Students should email their instructor(s) and teaching assistant(s) using [email or OWL]
- Emails will be monitored daily; students will receive a response in 24–48 hours



## 11. Resources



- All resources will be posted in OWL
- Required textbook [N/A]

## 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.)
- 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 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. Start your research project as soon as possible.
5. Do not be afraid to ask questions. If you are struggling with you research project or are facing any challenges please contact the instructor and or teaching assistant(s).

## 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](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. 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](https://www.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.

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](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](mailto:support@uwo.ca).

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

[Appeal Procedures](#)

[Registrarial Services](#)

[Student Development Services](#)

[Student Health Services](#)