

Medical Biophysics

MEDBIO 2500A: Introduction to Biophysics for Advancing Medicine

Course Outline for Fall 2026

Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, and Lūnaapéewak peoples, 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

2. Important Dates:

Classes Begin	Reading Week	Classes End	Study day(s)	Exam Period
September 9	October 10-18	December 9	December 10	December 11–22

September 30, 2025: National Day for Truth and Reconciliation; non-instructional day

September 17, 2026: Last day to add or drop a Fall 12-week course

November 30, 2026: Last day to withdraw from a Fall 12-week course without academic penalty

3. Contact Information

This information is limited to persons having Western University credentials with permission to access Western University' academic service portals.

4. Course Description and Design

Delivery Mode: blended

An introduction to the discipline of Medical Biophysics is developed through lectures on key introductory concepts and techniques used in Medical Biophysics research, real-world research seminars given by faculty members, and interactive in-class activities. Research areas include ultrasound, computed tomography, magnetic resonance imaging, molecular imaging, positron emission tomography, cancer radioligand therapy, medical physics for radiation therapy, and musculoskeletal biophysics.

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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

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- ☒ Attendance at sessions is required
- ☒ Missed work should be completed within 24 hours
- ☒ Closed captioning will be provided on audio or video recordings

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

In this course, students will develop an understanding of the discipline of Medical Biophysics and the different kinds of research undertaken within Medical Biophysics. This understanding will be developed through a combination of lectures on key introductory concepts and techniques used in Medical Biophysics research.

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

- Understand the different potential career paths in science and medicine stemming from undergraduate studies in Medical Biophysics.
- Describe the steps involved in acquiring data for different types of Medical Biophysics research projects.
- Compare different Medical Biophysics research techniques and tools, and determine which techniques are best in specified situations.
- Implement simplified physical laws to solve problems in Medical Biophysics

6. Course Content and Schedule

Unit	Week	Topic
1	1	Course Introduction (online)
	2	Diffusion (online and in person)
	3	Quiz 1 – Diffusion (in person)
2	4	Medical Physics (online)
	5	Quiz 2 – Medical Physics (in person)

	6	Reading Week
3	7	Musculoskeletal (online and in person)
	8	Quiz 3 – Musculoskeletal (in person)
4	9	Optics (online and in person)
	10	Quiz 4 – Optics (online and in person)
5	11	Molecular Imaging & PET (online & in person)
	12	Quiz 5 – Molecular Imaging & PET (in person)
6	13	MRI (online and in person)
	14	Quiz 6 – MRI (in person)
Other		Makeup Quiz (If necessary)

7. Participation and Engagement

- ☒ Students are expected to participate and engage with the content as much as possible
- ☒ Students can participate during in-class sessions or post on Brightspace forums after watching the recording
- ☒ Students are expected to participate by interacting in the forums with their peers and instructors

8. Assessment and Evaluation

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

Assessment	Format	Weighting	Flexibility
Unit 1	In Class Quiz – Mixed Format	16.7%	Drop lowest 1
Unit 2	In Class Quiz – Mixed Format	16.7%	
Unit 3	In Class Quiz – Mixed Format	16.7%	
Unit 4	In Class Quiz – Mixed Format	16.7%	
Unit 5	In Class Quiz – Mixed Format	16.7%	
Unit 6	In Class Quiz – Mixed Format	16.7%	

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 no assessment has been designated as requiring supporting documentation.

Access to full copy of the official Course syllabus is limited to persons having Western University credentials with permission to access Western University's academic service portals.