

INTERDISCIPLINARY MEDICAL SCIENCES MODULE

Advanced IMS Lab 4900F/G

Course outline for Fall 2019



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.

This course is generously supported by the **Science Student Donation Fund**. Grants from the Fund have allowed for the purchase of equipment integral to teaching this course.

1. Course details and important dates



Section	Day	Tutorial		Lab	
001	Tuesday	FNB 2220	11:30 am – 12:20 pm	MSB 113/117	1:30 pm – 5:20 pm
002	Wednesday				

Classes start September 5th and end December 6th. The Study days are December 7th and 8th. The final exam period is December 8th to 19th.

2. Interacting with your instructors, teaching assistants, and peers

Nicole Campbell is your course coordinator and instructor, but this course relies on participation of many **team** members including teaching assistants and YOU! **Communication** is key for this course and below you will find details about interacting with our team.

The course has been designed for students to interact in **lab bench teams**. You will work with these members at your own pace and assist each other with protocols and other tasks. We will spend a lot of time in the lab together each week and there often periods of downtime during incubations. Use the time wisely to discuss assignment expectations or just catch up on life with your lab mates, instructors, or teaching assistants.

There may be times throughout the semester when you need to contact your instructor or teaching assistants. In an attempt to keep the course organized and maintain work-life balance, we ask that you only send messages using the **“email” tab on OWL**. Our team will do our best to value your time, so please return the favour and refer to this document, other course resources, or chat with your peers before sending an email.

Not all questions/concerns can be addressed during class time or via email. If at any point, you would like to **book an appointment** with your instructor, you can do so using the link below. Your instructor is here to guide you through the course, but she can also be a **mentor** if needed. Do not hesitate to book an appointment to check in or discuss your progress. <https://dr-c.youcanbook.me>

3. Course Description and Design

Medical Sciences 4900F/G is offered jointly by Basic Medical Science Departments, this laboratory course introduces students to a variety of techniques used in medical research. Major topics include tissue culture, real time PCR, biochemical assays, histology, and medical imaging. The laboratory provides an introduction to research, with emphasis on hands-on experience.



4 lab hours; 1 tutorial hour; 0.5 credit

Laboratory courses are classified as experiential learning; therefore, this course is designed to engage students in authentic learning. Students will explore various basic science and clinical scenarios that relate to diabetes research. 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. Students with OWL issues should contact the Computer Support Centre at 519-661-3800 or www.itshelp.uwo.ca

4. Learning Outcomes

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

- Skillfully and safely perform a wide range of practical laboratory techniques from a variety of basic medical science disciplines, including cell culture, biochemical assays, western blotting, and real-time PCR.
- Clearly and concisely record, summarize, analyze, and interpret results from an experiment.
- Construct and deliver well-organized, and logical information making use of appropriate delivery techniques to communicate scientific knowledge to the target audience.
- Collaborate effectively by demonstrating respect for others, respect for different points of view, beliefs, and values, and taking on leadership, where appropriate.
- Create a research proposal based on a relevant area of focus within a specific disease that includes a literature review and justification for the experimental design.
- Evaluate relevant real-world scenarios and/or problems by integrating perspectives from medical science disciplines to make informed decisions.



5. Tutorial and laboratory sessions

The tutorials and labs for this course have been designed to support the desired learning outcomes. Therefore, students must **attend all tutorial and lab sessions and arrive on time**. We are reasonable people though and understand that students might have to miss a session due to illness or an interview. If this is the case, just send your course coordinator an email ASAP to arrange attending an alternate session. When in doubt, show up to the other lab section if possible. If you are unable to attend either session in a given week, you will need to attend the lab make-up date, which is scheduled for Friday, December 6th (time TBD). If there is an assessment associated with data obtained from a lab and the student misses the lab, they can talk to their instructor to borrow data to complete the assessment. The student will receive that grade once they have made up the missed lab at the end of the semester.



The tutorials take place before the scheduled laboratories and will serve as an opportunity to discuss the content. Students will also work with their lab bench teams to prepare for their laboratory session.

Laboratory Schedule

The following schedule outlines the tutorial and laboratory sessions for the semester. The sessions are divided up into molecular laboratories (first half) and clinical scenarios (second half) to give students broad exposure to medical science research.



Week	Dates	Tutorial	Laboratory
1	N/A	No tutorial	No lab
2	Sept 10/11	Introduction and competency assessment	Lab 1: Lab Skills
3	Sept 17/18	Cell culture: passaging and counting	Lab 2: Cell culture
4	Sept 24/25	Protein isolation and quantification	Lab 3: Protein isolation and BCA assay
5	Oct 1/2	Western blot I: denaturing, loading, transferring	Lab 4: Western blot I
6	Oct 8/9	Western blot II: antibodies and imaging	Lab 5: Western blot II + progress report (lab bench team)
7	Oct 15/16	qPCR: isolating RNA, reverse transcription (RT), qPCR	Lab 6: RNA isolation, RT, qPCR
8	Oct 22/23	Review and preparation for skills assessment	Lab skills assessment with assigned time period
9	Oct 29/30	Poster presentations + individual assessment (scheduled time)	
10	Nov 5/6	Fall Reading Week	
11	Nov 12/13	Research ethics at Western University	Ethical decision-making simulation
12	Nov 19/20	Renal physiology, anatomy, and imaging	Diabetes case study
13	Nov 26/27	Peer review and committee introductions	Grant panel preparation
14	Dec 3/4	No tutorial	Grant panel to evaluate peer proposals and determine funding

6. Resources

Students must bring their personal protective equipment to all labs unless otherwise stated. This includes a lab coat and safety glasses.



All course materials will be provided on OWL. There is no required textbook for this course. A **laboratory manual** has been generated by your instructor and lab coordinator. You will be able to purchase this resource and a sharpie during the first scheduled laboratory session. You are expected to bring the manual to all scheduled “labs”. To assist you with this course, a website has been developed by the course coordinator and former IMS students. On this site, you will find access to resources that will help you with your scientific communication. Students are not required to access the website but are encouraged to take advantage of the resources. You will be given access to the site because you are enrolled in this course. The site is: www.iamims.com

7. Evaluation

Below is the evaluation breakdown for the course. No deviations will be made unless discussed with all members of the course. Deadlines will be finalized during the semester with students, but the weeks assignments are due have been posted in the table below.

Note that OWL deadlines are set for 11:55 pm

A detailed and comprehensive set of policies and regulations concerning examinations and grading can be found at the following website:
http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading_73



Component		Format	Weighting	Date
Digital lab book/reflections		OWL online	15%	Throughout the term
3 Ps*		Mixed	5%	Throughout the term
Progress report		Written	10%	Week 6
Lab skills assessment		Practical in lab	10%	Week 8
Science communication symposium	Poster presentation** + team evaluation	Oral/written	15%	Week 9
	Oral 'defense' (individual)	Oral	10%	
Grant proposal	Outline	Mixed	5%	Week 4
	Proposal	Written	20%	Week 12
	Panel	Oral/written	10%	Week 14

*3 P's = prepared, professional, participation. Students are expected to be prepared for all labs (this includes bringing your PPE to every lab), act professional during all labs, act safely during all labs, and participate in labs when possible. Therefore, all students start with 5% and will lose marks if they do not meet expectations (see OWL for details).

**Students will create and present their posters with their lab bench teams.

→ **24/7 policy** for all assessments! After an assignment is returned, wait 24 hours before contacting your evaluator so that you can digest the feedback. To ensure a timely response, reach out within 7 days following the release of the assessment.

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

8. Statement on Academic Offences



"Scholastic offences are taken seriously, and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

9. 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 (<http://www.turnitin.com>).

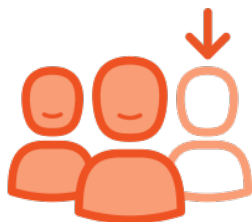
10. Absence from Course Commitments

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-reporting of absence** or via the **Academic Counselling** unit. The Academic Counselling is located in NCB 280, and can be contacted at scibmsac@uwo.ca.

NEW!! For further information, please consult the university's policy on academic consideration for student absences as there are updates to the academic consideration procedures.

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf



Self-reporting considerations cover you for 48 hours (yesterday + today or today + tomorrow). Your instructor will receive notification of your consideration and you are expected to submit your missed work within 24 hours of the end of your 48-hour period.

Accommodation for Religious Holidays

The policy on Accommodation for Religious Holidays can be viewed at the following link: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

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 at the following link:
http://www.uwo.ca/univsec/pdf/academic_policies/exam/definitions.pdf

11. Academic Policies and Statements

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 Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation or review [The policy on Accommodation for Students with Disabilities](#).

Cell Phone and Electronic Device Policy

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, i.e., cell phones, tablets, cameras, 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 the recording.

Correspondence Statement

In accordance with the policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, 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.

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.

12. Support Services

Academic Counselling (Science and Basic Medical Sciences):

<http://www.uwo.ca/sci/counselling>



Appeal Procedures:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/appealsundergrad.pdf

Registrarial Services: <http://www.registrar.uwo.ca>

Student Development Services: <http://www.sdc.uwo.ca>

Student Health Services: <http://www.shs.uwo.ca/>

USC Student Support Services: <http://westernusc.ca/services/>