

Biology 1290B Course Outline 2025

1. Course Information

Course Information

Biology 1290B – Biology of Microorganisms

List of Prerequisites

Grade 12 U Biology

Unless you have either the requisites for this course or written special permission from your Dean's Designate (Department/Program Counsellors and Science Academic Advisors) 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.

2. Instructor Information

Instructors	Email	Office	Office Hours
Dr. Patrick McDonald	pmcдона5@uwo.ca		Wed. 11:30 am Fri. 12:30 pm
Reza Khazaei	rkhazaei@uwo.ca		

Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

Office hours are held in-person in BGS 3046.

3. Course Syllabus, Schedule, Delivery Mode

Course Description: The fundamental principles of biology with emphasis on cell function and the role of microorganisms in public health, sanitation, food, and nutrition. Restricted to Food and Nutrition modules or by permission of the Department of Biology.

Learning Outcomes and Objectives:

By the end of the course, students will be able to

- identify and describe the function of organelles and structures found in cells
- compare eukaryotic and prokaryotic cells
- understand the basic growth requirements of prokaryotes and eukaryotes
- develop an understanding of microbial genetics in both prokaryotes and eukaryotes
- describe the major groups of prokaryotic and eukaryotic pathogens and parasites
- differentiate between the methods used for controlling prokaryotic and eukaryotic pathogens and parasites
- recognize the effect of infectious microbes on the respiratory and digestive systems
- explain the basic concepts of public health microbiology regarding food, municipal water purification and sewage treatment
- give examples of other uses of microbes in Applied Microbiology

Tentative lecture schedule: Students will be informed of any changes.

Lecture	Date	Topic	Reading
1	Jan. 7	Intro to Bio 1290	
2	Jan. 9	Microbiology: Then and now	Ch. 1
3	Jan. 14	The chemical building blocks of life	Ch. 2
4	Jan. 16	Naming, observing, and cataloging the microbial world	Ch. 3
5	Jan. 21	Structure and organization of prokaryotic cells	Ch. 4
6	Jan. 23	Structure and organization of eukaryotic microbial cells	Ch. 5
7	Jan. 28	Viruses	Ch. 6
8	Jan. 30	Microbial growth and nutrition	
9	Feb. 4	Term Test 1	Ch. 7
10	Feb. 6	Microbial metabolism	Ch. 8
11	Feb. 11	Microbial genetics	Ch. 9
12	Feb. 13	Microbial genetics 2	Ch. 9
	Feb. 18 Feb. 20	Reading Week	
13	Feb. 25	Gene transfer, genetic engineering and genomics	Ch. 10
14	Feb. 27	Control of microorganisms: Physical and chemical agents	Ch. 11
15	Mar. 4	Control of microorganisms: Antimicrobial drugs and superbugs	Ch. 12
16	Mar. 6	Diagnosing infections	
17	Mar. 11	Term Test 2	Ch. 13
18	Mar. 13	Infectious diseases: Respiratory	Ch. 14
19	Mar. 18	Infectious diseases: Digestive	Ch. 15
20	Mar. 20	Infectious diseases: Digestive 2	Ch. 15
21	Mar. 25	Host microbe relationship and epidemiology	Ch. 20
22	Mar. 27	The immune response to infection: Innate immunity	Ch. 21
23	Apr. 1	Resistance and the immune system: Adaptive immunity	Ch. 22
24	Apr. 3	Infectious disease and immune disorders	Ch. 23

Tentative tutorial schedule: Students will be informed of any changes.

Tutorial	Date	Topic
	Jan. 7	No tutorial
1	Jan. 14	Salmonella
2	Jan. 21	Norovirus
3	Jan. 28	Listeria
	Feb. 4	Term Test 1
4	Feb. 11	Clostridium
	Feb. 18 Feb. 20	Reading Week
5	Feb. 25	E. coli O157
6	Mar. 4	Shigella
	Mar. 11	Term Test 2
7	Mar. 18	Vibrio
8	Mar. 25	Campylobacter
	Apr. 1	No tutorial

Classes begin: January 6, 2025

Spring Reading Week: February 17 – 21, 2025

Classes end: December April 4, 2025

Exam period: April 7 – 30, 2025

Contingency plan

Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will **not** change. Any assessments affected will be conducted online as determined by the course instructor.

4. Course Materials

Required textbook

Fundamentals of Microbiology 12th edition – Jeffrey Pommerville.

It is available at the bookstore. An electronic version of the text is available.

<https://bookstore.uwo.ca/textbook->

[search?campus=UWO&term=W2024B&courses%5B0%5D=001_UW/BIO1290B](https://bookstore.uwo.ca/textbook-search?campus=UWO&term=W2024B&courses%5B0%5D=001_UW/BIO1290B)

Cost: \$192 (ebook)

Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class.

All course material will be posted to OWL: <http://owl.uwo.ca>.

If students need assistance with the course OWL site, 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.

Technical Requirements

Required Equipment:



Stable internet connection



Laptop or computer with webcam



Working microphone

5. Methods of Evaluation

The overall course grade will be calculated as:

Assignment	20%	Due Friday March 28 at 4:00 pm
Term Test 1	20%	1 hour – Feb. 4 (Lectures 1-8)
Term Test 2	20%	1 hour – Mar. 11 (Lectures 10-16)
Final Exam	40%	2 hours - Scheduled during April exam period (Cumulative)

Late assignments will be penalized 10% per day.

6. Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth 10% or more of the overall course grade:

For work totalling 10% or more of the final course grade, you must provide valid medical or supporting documentation to the Academic Advising Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

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

The Student Medical Certificate is available at

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

Absence from the term test(s) will be covered with a makeup test/exam. If a makeup term test is not administered before the release of student grades, the weight of the term test will be shifted to the final exam.

Absence for the assignment due date will result in an extension for the period of accommodation.

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Advising office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

7. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request an accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Advising office of their Faculty of Registration. Please visit the Diversity Calendars posted on our university's EDID website for the recognized religious holidays:

<https://www.edi.uwo.ca>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

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

8. Academic Policies

The website for Registrarial Services is <https://www.registrar.uwo.ca/>.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

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 their official university address is attended to in a timely manner.

No electronic devices are permitted for tests or exams.

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 Web site:

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

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 The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

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

9. Support Services

Please visit the Science & Basic Medical Sciences Academic Advising webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

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

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.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Learning-skills counsellors at Learning Development and Success (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.