

Essentials of Microbiology

MBIO 1220 - Syllabus

Welcome to the University of Manitoba's Essentials of Microbiology offered through Distance and Online education. This course will introduce you to the world of microorganisms, their role in our lives, and their impact on human health and disease.

Instructor contact information

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Course description

The University of Manitoba Undergraduate Calendar describes MBIO 1220, Essentials of Microbiology, as follows:

An introduction to the essential principles of microbiology including immunity, with emphasis on microbial disease. Not available to students who have previously obtained credit in or are currently enrolled in MBIO 1010 or MBIO 1011 (or the former MBIO 2100 or MBIO 2101). NOTE: MBIO 1220 is intended for students planning to enter the College of Nursing or other health care or related programs. Students that have completed MBIO 1010 but wish to take MBIO 1220 to satisfy Faculty of Nursing entrance requirements must obtain departmental permission prior to registering for MBIO 1220. MBIO 1220 cannot be used to satisfy the requirements of the Microbiology Honours or Major degree programs. MBIO 1220 can be used as an elective course in any Science program.

Course objectives

Upon completion of the course, you should be able to:

1. Recognize that microorganisms are all around us, and outline both harmful and beneficial roles they play in our environment.
2. Describe the basic structural features, metabolism, growth and genetics of bacteria, viruses, and eukaryotic microorganisms.
3. Describe the major components of the human immune system and discuss the use of vaccines to prevent disease.
4. Discuss the microbiome and its role in human health.
5. Explain how disease-causing microbes are spread, and how they interact with their hosts to cause illness.
6. List the major groups of antimicrobial drugs, and discriminate between drugs used to treat bacterial, viral, and eukaryotic infections.
7. Name the causative agent and summarize the transmission, progression, treatment, and prevention of some of the most important infectious diseases.

Course materials

Required

The following textbook is required to complete this course, and can be purchased from the [University of Manitoba Bookstore](#).

Nester's Microbiology: A Human Perspective, 2024 Evergreen edition, by Anderson, Salm, Beins, Nester, and Allen (or the 10th ed. Which is almost identical). New York, NY: McGraw-Hill.

Note that it is also possible to complete the course using the 9th edition textbook. There were several changes between the 9th and 10th, so if you're using the 9th edition, make sure you look out for special instructions that will be posted in the discussion forum.

The online access code for the textbook is not required for this course.

Minimum technology requirements

Students enrolled in this course must ensure they satisfy the following minimum technology requirements:

1. A computing device capable of running Respondus Lockdown Browser ((Mac OS 10.4 or higher, or PC Windows 7 or higher),
2. An internet connection capable of streaming videos and downloading software, and
3. Access to a webcam and microphone.

[Click here](#) for an additional list of recommended technologies for remote and online courses at the University of Manitoba.

If you encounter technical difficulties with UM Learn or other University of Manitoba computer services you should contact the [IST help desk](#), which is open Monday to Friday, from 8:00 am to 8:00 pm.

Course overview

There are 3 modules in the course each consisting of numerous units. Note that textbook chapters 9–11, as well as chapters 28–30, are not covered in this course.

Topics

- Module 1 Life and Death of Microorganisms
- Module 2 Microorganisms and Humans
- Module 3 Infectious Diseases

Learning activities

Unit activities will include assigned readings from the textbook (the summaries and/or guidelines provided with the reading list will direct you to the examinable parts of each textbook section), reading the study notes in this course manual and completing the self-tests in each unit. As an additional note about the course readings, there is a lot of material to read for this course. You will study two or three units every week. The course will make extensive use of the summary tables in many of the chapters, and you will be guided to these summary tables frequently throughout the course.

Use the course schedule to stay on track so that you do not fall behind.

The midterm exam dates are outlined in the next section. Note that it is very important to complete the assigned readings for each unit on time to ensure that you will have sufficient time to review your materials before the final exam. Also note that textbook chapters 9–11 and chapters 28–30 will not be required reading for the course.

Evaluation and grading

Distribution of marks

Evaluation	Percentage
Bi-Weekly unit quizzes	20%
Midterm test 1	20%
Midterm test 2	20%
Final examination	<u>40%</u>
Total	100%

Weekly unit quizzes

These short quizzes will be held every two weeks. The quizzes test only the material covered since the last quiz and are meant to keep you from falling behind in the course. They are open book and will be open throughout the week in which they are due. (ie. Every second Saturday, although you're encouraged to get them done early). There will be 6 quizzes, and your 20% quiz mark will be the average of your best 5.

Midterm tests

Midterm tests will be closed book, multiple choice tests, with a one-hour time limit, and will be administered using Respondus monitor invigilation software. The midterms will be open for about a week, and you can choose your own start time. You can find detailed instructions on how to access the midterm tests on the course UM Learn site as well as the exact dates that the midterm tests will be available.

Final exam

The final examination for the course will be a two-hour, closed book exam scheduled by the Registrar's office. Like the midterms, the final exam will be invigilated using Respondus monitor. The final exam must be written online at the time scheduled, and you must remain available throughout the December exam period until the exam date has been released.

The final exam will consist of 80 multiple choice questions that cover material from all units of the course. Students must achieve a minimum mark of 45% on the final exam to receive a passing grade in the course. A sample examination and answer key are available on UM Learn.

Online invigilation

The midterms and final exam in this course will be invigilated using Respondus monitor. To use Respondus monitor, you must have a device capable of running Respondus lockdown browser (Mac OS 10.4 or higher, or PC Windows 7 or higher), and a working microphone and webcam. You can see a complete list of technology requirements for this course in the section Minimum Technology Requirements, below.

Self-registering for Respondus (e-proctoring software)

A resource has been developed to help you review the fundamentals of academic integrity and download, install, and run Respondus LockDown Browser. You can also complete a

practice exam (as many times as you wish) to become familiar with exam-writing when Respondus LockDown Browser and Monitor are enabled.

(Note: Respondus Monitor cannot be run without Respondus LockDown Browser.)

You can self-register for this Respondus Monitor practice course by following these steps:

1. Login to UM Learn.
2. Select 'Self-Registration' from the top menu.
3. Select 'Respondus Monitor Practice Exam' (near the top of the list).
4. Complete the registration steps and then click on 'Go to course offering'.

Practicing well in advance of your course quizzes, tests, and exams will save you time, focus your efforts, and ensure you have more time to ask questions that you may have about this tool. Please read the FAQ section in the course to access additional information, such as privacy, instructor settings, and more.

A word of caution about the midterm tests and the final examination

Some students find that they do very well on the midterm exams, but they do not do nearly as well on the final examination. While the midterm exams are intended to be of similar difficulty to the final examination, many students find the material covered at the end of the course to be more challenging than earlier material upon which the midterms will be based.

Please keep this in mind as you prepare for the examination. Follow the course schedule closely, to make sure that you have sufficient time to cover the challenging units at the end of the course. Once you have completed the course material, attempt to write the final practice exam in under 2 hours. (In other words, write it under the same conditions that you will have for the actual final exam).

Grading scale

Grades for the course will be assigned according to the following table. **Please note that you must obtain a mark of at least 45% on the final exam to obtain a passing grade in the course.**

Letter grade	Percentage range	Description
A+	90 – 100	Exceptional
A	80 – 89	Excellent
B+	75 – 79	Very good
B	70 – 74	Good
C+	65 – 69	Satisfactory
C	60 – 64	Adequate
D	50 – 59	Marginal
F	less than 50	Failure

Policy regarding missed quizzes, tests, and exams

Quizzes

The bi-weekly quizzes are meant to be flexible. You can take them any time up until the end of the week in which they are due. Plan to complete your activities early and you shouldn't miss any quizzes. Only your five best quizzes will count toward your final grade, so you can miss one quiz without penalty. (Although you are strongly encouraged to write them all!)

Midterm tests

The midterm tests will be open for a period of one week, and you can choose your own start time, so hopefully this will eliminate any scheduling problems. If you cannot write your test on the dates scheduled, contact the instructor well in advance to see if an earlier test date can be arranged. Because test answers will be released as soon as the test period is over, it won't be possible to write a test after the date has passed. If you miss a test due to illness, contact the instructor and the 20% value of the test will be re-weighted onto the final exam.

Final exam

The final exam date will be set by the Registrar's office and should be released by the beginning of November. You must remain available throughout the exam period (December 9 – 20) until the final exam schedule has been released.

In case of a missed final exam, please be aware that Instructors at the University of Manitoba are not allowed to reschedule final exams on their own! Deferred final exams can only be arranged by your home faculty. If you miss a final exam for medical or compassionate reasons, you must contact your home faculty within 2 working days, with documentation, to apply for a deferral.

Academic Integrity

While your quizzes are open book, you are expected to take them by yourself. Taking quizzes as part of a team, or otherwise receiving assistance with quiz and test questions is considered to be inappropriate collaboration and is subject to discipline under the University of Manitoba student bylaws.

The Midterms and the Final exam are closed book tests and will be invigilated using Respondus monitor. You must take these tests by yourself. Communicating with anyone by any means, using notes or cheat sheets, or receiving any form of assistance during the test is considered inappropriate collaboration and is subject to discipline under the University of Manitoba student bylaws.

You should acquaint yourself with the University's policies on plagiarism, cheating, and examination impersonation as detailed in the General Academic Regulations and Policy section of the University of Manitoba Undergraduate Calendar. Note: These policies are also included on the course UM Learn site in the folder titled "Course information".

Student Accessibility Services

The University of Manitoba is committed to providing an accessible academic community. Student Accessibility Services (SAS) offers academic accommodation supports and services such as note-taking, interpreting, assistive technology, and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

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