

Essentials of Microbiology

MBIO 1220: Winter 2026: 3 credit hours

COURSE SYLLABUS

INSTRUCTOR: Diana Mlinar, M.Sc
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TIME/LOCATION: A01: Monday/Wednesday/Friday
A02: Monday/Wednesday/Friday
A04: Tuesday/Thursday

OFFICE HOURS: By appointment only

COURSE OBJECTIVE AND DESCRIPTION:

This course serves as an introduction to the essential principles of microbiology and immunity, with an emphasis on human microbial diseases. At the end of this course the student should be able to identify the main differences between prokaryotic and eukaryotic cells and the characteristics of each, identify clinically important bacteria, fungi and viruses and their effects on the various organ systems and know the immune responses that are triggered and how they unfold.

TEXTBOOK:

Microbiology: A Human Perspective 10th Edition. Nester, Anderson, Roberts. McGraw- Hill.

RECORDING LECTURES:

The instructors of this course hold copyright over all lecture material and exam content. No audio or video recording of the lectures are permitted without prior consent from the instructor. You are not permitted to post any course material to external websites.

EVALUATION:

The course evaluation will include two mid-term exams and a final exam. The dates and values of these examinations are as follows:

Mid-term #1: 60 minutes.....	25%
Mid-term #2: 60 minutes.....	25%
Final Exam: To Be Determined.....	50%

****Note:** All examinations will be multiple choice format. The final exam will be cumulative.

COMMUNICATION:

All communication via email must be from a umanitoba email address. If you do not write the email yourself (ie: you use a robot to generate a message) you will not receive a response. You must also write your email formally and respectfully.

GOSSIP GROUPS:

The University is not affiliated with gossip groups like Telegram or Reddit. If you choose to waste your time with such non-sense, please be mindful of the effect that it will have on your performance in your courses. University has always been a very time-consuming and challenging pursuit. Despite the extreme abundance of distraction that exists for students today, there has been no change or reduction to the workload necessary to succeed. Any time that is not used effectively is sure to have an impact on your academic performance.

ZOOM RECORDINGS:

Lecture recordings will be provided to make up for in class mid-term exams. They may also be provided to ensure that all content is covered if the instructor has to miss a lecture or if there is differing progress across the sections.

FACULTY OF SCIENCE STATEMENT ON ACADEMIC DISHONESTY:

The Faculty of Science and The University of Manitoba regard acts of academic dishonesty in quizzes, tests, examinations, laboratory reports or assignments as serious offences and may assess a variety of penalties depending on the nature of the offence.

Acts of academic dishonesty include, but are not limited to bringing unauthorized materials into a test or exam, copying from another student, plagiarism, and examination impersonation.

Note: cell phones, smart watches, lecture notes, pagers or electronic translators are explicitly listed as unauthorized materials, and must not be present during tests and examinations.

Penalties that may apply, as provided for under the University of Manitoba's Student Discipline By-Law, range from a grade of zero for the assignment or examination, failure in the course, to expulsion from the University.

The Student Discipline By-Law may be accessed at:

http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html

The list of suggested minimum penalties assessed by the Faculty of Science for acts of academic dishonesty is available on the Faculty of Science webpage:

<https://umanitoba.ca/governance/governing-documents-students#studentdiscipline>

All Faculty members (and their teaching assistants) have been instructed to be vigilant and report every incident of academic dishonesty to the Head of the Department.

REGISTRATION RESTRICTIONS

PLEASE ENSURE THAT YOU THE STUDENT ARE ENTITLED TO BE REGISTERED IN THIS COURSE:

THIS MEANS THAT YOU THE STUDENT HAVE:

The appropriate prerequisites, as noted by the calendar description, or have permission from the instructor to waive these prerequisites

Not previously taken, or are concurrently registered in this course and another that has been identified as “not to be held with”

The registration system may have allowed the student to register but it is up to the student to ensure that they have met all the requirements.

Consequences may be the student being withdrawn from the course part way through the term, or the course not used in the degree program. There will be no fee adjustment. This is not appealable.

DEFERRED EXAMINATIONS:

Deferred exams will not be administered. Failure to write a mid-term exam will result in the weight of the mid-term being transferred to the final exam.

If one mid-term exam is missed the final exam will be prorated to 75%. Should both mid-terms be missed the maximum value of the final exam will be 75%. If you have to miss your mid-term exam, you must contact your instructor as soon as possible and **you must present a valid reason for your absence-either for medical or compassionate reasons.**

If you have to miss your final exam, you must meet with an advisor in your home faculty. Final exam deferrals are not managed at the instructor level and you do not need to let your instructor know of your absence. All information will be communicated to the instructor from the faculty advisor.

GRADING SCHEME:

The approximate grading scheme follows what is shown below. Adjustments can be made to this scheme depending on student performance but will never be adjusted to the detriment of the student.

A+ (>90%), A (80-89.9%), B+ (75-79.9%), B (70-74.9%), C+ (65-69.9%), C (60.0- 64.9%), D (50-59.9%), F (<50%).

MBIO 1220 Course topics*

Textbook chapters

Part 1: The Life and Death of Microorganisms

Humans and the Microbial World	1
The Molecules of Life	2
Microscopy and Cell Structure	3
Dynamics of Microbial Growth	4
Control of Microbial Growth	5
Microbial Metabolism: Fueling Cell Growth	6
The Blueprint of Life and Bacterial Genetics	7, 8

Part 2: Microorganisms and Humans

Viruses, Viroids and Prions	13
The Innate Immune Response	14
The Adaptive Immune Response	15
Host-Microbe Interactions	16
Immunologic Disorders	18
Applications of Immune Responses	17
Epidemiology	19
Antimicrobial Medications	20

Part 3: Infectious Diseases

Respiratory System Infections	21
Skin Infections	22, 23
Digestive System Infections	24
Blood and Lymphatic Infections	23, 25
Nervous System Infections	26
Genitourinary Tract Infections	27

- Note that some topics may not be covered due to time constraints and the order of topics may be adjusted as the course progresses.