

Essentials of Microbiology
MBIO 1220: A02 Winter 2021: 3 credit hours

COURSE SYLLABUS

INSTRUCTOR: Diana Mlinar, M.Sc.
421 Buller Building
email: Diana.Mlinar@ad.umanitoba.ca

TIME/LOCATION: Monday/Wednesday/Friday 11:30-12:20
Zoom Lecture Delivery → Live

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.

LECTURE DELIVERY

Lectures will be delivered using Zoom. The link and the password to watch the lectures will be emailed to students. The lectures will be recorded and posted on umlearn until 11:59pm the following day. It is your responsibility to watch the lecture sometime within this time window. If for *any* reason you are unable to watch the lecture recording within this window, you must email a classmate to request notes from the lecture. I cannot extend the lecture recording for individual students.

COURSE TECHNOLOGICAL REQUIREMENTS

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

- A computing device where one can create and edit documents
- An internet connection capable of streaming videos and downloading software
- Access to a web-cam and microphone

RECORDING LECTURES:

The instructor of this course holds 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.

TEXTBOOK:

Microbiology: A Human Perspective 9th Edition. Nester, Anderson, Roberts. McGraw-Hill. **Please note that the 8th edition is also acceptable.**

(Microbiology: An Introduction 11th Edition. Tortora, Funke, and Case. Pearson. May also be used as a substitute).

EVALUATION:

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

- Mid-term #1:** Friday February 12, 2021 5:30 p.m., 50 mins25%
- Mid-term #2:** Friday March 19, 2021 5:30 p.m., 50 minutes25%
- Final Exam:** TBD, 2 hours50%

****Note:** All examinations will be multiple choice format and will be conducted on umlearn. The final exam will be cumulative.

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%. The weight of the missed mid-term exam will only be transferred to the weight of the final exam in the presence of a valid excuse.

APPROXIMATE GRADING SCHEME:

Note*: This grading scheme is an approximation only. Amendments to this scheme may be made depending on the final class average. It should be used only as a guide.

A+: 90-100 A: 80-89 B+: 76-79 B: 70-75 C+: 65-69 C: 55-64 D: 50-54 F: <50

OTHER IMPORTANT DATES:

February 15-19, 2021: No Class, Reading Week

Wednesday March 31, 2021: Last day for voluntary withdrawal

Friday April 2, 2021: No class, Good Friday

Friday April 16, 2021: Last Day of Classes

ACADEMIC INTEGRITY

Academic integrity is taking responsibility for and being honest with your work and respecting the work of others. Since you are a member of the university community, we want you to learn what that responsibility and honesty entails and how we respect the work of others.

The Faculty of Science continues to uphold high standards of academic integrity. We know that you, our students, support us in this and we count on each and every one of you to do your part. We will continue to ensure no one is using Covid-19 circumstances as a means to gain an unfair advantage over their fellow students. Thus, as with standard in-person examinations, we expect all students to strictly adhere to instructions from their professors regarding what resources can and cannot be used during the exams, to follow other rules the professors wish to set, and to adhere to the academic conduct standards of the University and Faculty.

To aid professors in assuring that all forms of assessments have been administered fairly, the University will be electronically monitoring all tests, quizzes and examinations, included, but not limited to overseeing chat-rooms, relevant predatory web-sites and, in so doing, we will analyze scholastic evidence of individual exams.

Please view information with regards to academic integrity: **be aware; be proactive; be smart and be honest.**

Academic Integrity Message from Associate Dean Krystyna Koczanski:

<https://youtu.be/Ok-lilm4SeE>

The Student Discipline By-Law may be accessed at:

https://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://sci.umanitoba.ca/wp-content/uploads/2018/11/Acad_Dishon_TABLE_RevCSS_AdminC_Jul2012_WEB.pdf

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

<https://universityofmanitoba.desire2learn.com/d2l/le/content/6606/viewContent/1463719/View>

STUDENT RESPONSIBILITIES

It is your responsibility to make sure that all eligibility requirements are met to be registered in this class. This means:

- You have taken the appropriate prerequisites, as noted by the calendar description, or have documented permission from the instructor to waive these prerequisites.
- You have not previously taken, and are not concurrently registered in this course and another that has been identified as "not to be held with".

MBIO 1220 Course topics*

Textbook chapters

Nester 8th ed.

Tortora 11th ed.

Part 1: The Life and Death of Microorganisms

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

Part 2: Microorganisms and Humans

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

Part 3: Infectious Diseases

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

* Some topics may not be covered due to time constraints.

How to succeed in your science courses?

The Faculty of Science is committed to delivering the high quality education our students have come to expect. We also want to ensure that you set yourself up for success. We want you to succeed!

#1. We recommend that you consider the stated requirements of this course..... While we are making reasonable accommodations for students, you will want to plan ahead

accordingly and be flexible.

#2. Use the [Registration Revision Period](#) (January 18-January 29/February 1, 2021) to evaluate the course syllabus, and the course content. Some courses will have interactive activities and assessments such as tutorials, online labs, and online quizzes at scheduled times throughout the term in addition to/in lieu of examinations. Make sure that your current situation will allow you to participate in all courses to the fullest. ***This is particularly important for students who will be joining us from different time zones.***

Some courses may have a mandatory on-campus component. Student safety is very important to us and the University of Manitoba, operating in close collaboration with Manitoba Public Health, has authorized these components. The primary aim of our in-person components is to maximize the education and training of our students whose future is at risk without it. The University of Manitoba is implementing many safety measures to ensure the safety of students and staff while on campus, such as requiring face masks (three-ply disposable ones), proper hand hygiene, physical distancing, and sanitation of high-touch surfaces with ethanol solution or disinfectant wipes to help mitigate the risks associated with contracting COVID-19.

If you know that you will be unable to participate in an on-campus component because, for example, you are not currently in Winnipeg and are unable to come to Winnipeg, you, or someone you live with, is immunocompromised, or you are simply uncomfortable with attending, you are strongly urged to withdraw from the course during the Registration Revision Period.

Note: during the registration revision period you will be able to drop/add courses without any financial consequence. Speak directly with instructors if you have any questions specific to their course.

#3. Take time to consider the workload associated with the course schedule you are planning. Remote learning has its challenges and your ability to adapt and be flexible in this context is very important. Be realistic about other commitments and distractions that are part of everyday life, and make your course selection decisions accordingly. If you want to discuss anything, the academic advisors are available – email: sciadv@umanitoba.ca to request an appointment. **Professional Conduct**

We recognize that these are unusual circumstances, and that there are some adjustments needed when working virtually. At the same time, we do want to remind you that University policies, such as the **Respectful Work and Learning Environment policy**, still apply, as do basic expectations around how students will engage with each other, and with the University. This means that when participating in classes, online meetings, etc., students are expected to behave professionally, and follow the same basic norms as they would in person, such as being clothed, not being impaired, and participating respectfully. **Essentially, if you wouldn't do it in an in-person class, don't do it in virtual setting.**

Section 2.5(c) of the Student Non-Academic Misconduct and Concerning Behaviour Procedure

(https://umanitoba.ca/admin/governance/media/Student_Non-Academic_Misconduct_and_Concerning_Behaviour_Procedure_-_2018_09_01.pdf).

Course Technological Requirements

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- Access to a web-cam and microphone.

Timeline for electronic inquiry response:

Please be respectful of the specific reply timelines that faculty members or staff members set for your course. Generally, when a faculty member or staff member receives an electronic inquiry from you they will try to reply within one or two business days of receipt of the email. It is understood that sometimes the reply may come sooner or in some instances later than this, with a normal response envelope between 1-3 business days.

Medical Notes

Students who are unable to meet a course requirement due to medical circumstances are currently not required to submit medical notes. However, students are required to contact their instructor or academic advisor by email to inform of the missed work and make arrangements for extensions, deferrals, or make-up assignments. Please follow these guidelines, if you are unable to meet an academic requirement for your courses.

- Contact your instructor for term work such as a class, quiz, midterm/test, assignment, lab;

- Contact an advisor in your faculty of registration for a missed final exam (scheduled in the final examination period);

- Inform your instructor/advisor as soon as possible, do not delay. Note for final exams, students must contact within 48 hours of the date of the final exam.

- Email your instructor/advisor from a U of M email address, and include your full name, student number, course number, and academic work that was missed within 48 hours of the date of the missed examination.

Please note that circumstances that result in missing multiple course assignments/tests/classes may require medical documentation (e.g., Authorized Withdrawal, Tuition Fee Appeal, Leave of Absence, or accessibility-related accommodations). Students are advised to speak with an [advisor in their faculty/college/school of registration](#) in this case.

Voluntary Withdrawal (VW), Authorized Withdrawal (AW) and Limited Access Policies

VW: Students have the opportunity to voluntarily withdraw (VW) from this class up to March 31, 2021. By then, you will have received feedback to allow you to assess your progress and determine if you are achieving the grade you are aiming for in this course. If you are unlikely to be successful in the course, or you are not achieving the grade that you are aiming for, you should consider a VW from the course. You may contact me to review your progress in more detail, or you may discuss the VW option with a Faculty academic advisor. Students enrolled in the course after the VW deadline will be assigned a final grade.

http://umanitoba.ca/u1/know_yourself/573.html

AW: At times medical or compassionate circumstances arise in a student's life that prevent them from performing as they would in normal circumstances. If you are in this position, please contact a Faculty academic advisor to discuss your options. Be prepared to provide documentation, which supports your situation.

http://www.umanitoba.ca/student/resource/student_advocacy/authorized-withdrawal/index.html

Limited Access Policy: The Senate Executive Committee approved, on behalf of Senate that section 2.5(a) of the Repeated Course Policy to be **suspended indefinitely**. **Sec 2.5 refers to Limited Access**. Suspension of LAP means that you can retake the course you have decided to VW in the next semester.

Grading Accommodation for Fall 2020 and Winter 2021

Students may choose to exclude from their UM GPA either:

a. up to one (1) grade received in Fall term, and up to one (1) grade received in Winter term, or b. up to one (1) grade received in a spanned course which runs through both Fall and Winter terms.

The adjusted GPA resulting from exclusion of one or two grades will be used for all GPA- based performance requirements including program progression, probation, suspension, and requirements to withdraw, and to determine eligibility for UM bursaries and scholarships.

The 'excluded' grade would remain on the UM transcript and would be used for progression and prerequisite requirements that specifically reference minimum letter grade requirements.

Students will have until the end of Winter term 2021 to make their exclusion decisions.

Using Copyright material

Please respect copyright. We will use copyrighted content in this course. University guidelines state that copyrighted works, including those created by me, are made available for private

study and research and must not be distributed in any format without permission. Since it is illegal, do not upload copyrighted works to a learning management system (such as UM Learn), or any website, unless an exception to the Copyright Act applies or written permission has been confirmed. For more information, see the University's Copyright Office website at <http://umanitoba.ca/copyright/>

or contact um_copyright@umanitoba.ca .

Students Accessibility Services

If you are a student with a disability, please contact SAS for 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. Student Accessibility Services

<http://umanitoba.ca/student/saa/accessibility/>

520 University Centre
204 474 7423 Student_accessibility@umanitoba.ca

