

Course, credit hours and term: MBIO 1220 Essentials of Microbiology, 3 credit hours, Winter 2022

Pre-requisites: N/A.

Meeting Time: 11:30 AM – 12:20 AM MWF Remote Learning access provided through Zoom videoconference platform. Zoom link details to be provided through UM Learn. Zoom links are also available on Class plan.

We will have weekly Monday live zoom classes. The detailed class plan with the necessary zoom links for the classes are available on the class plan provided on UM learn.

For Wednesday and Friday classes recorded videos will be uploaded on UM learn. Please see the class plan below for details on synchronous and asynchronous classes.

INSTRUCTOR CONTACT INFORMATION

Instructor: Dr. Muntahi Mourin [Email: Muntahi.Mourin@umanitoba.ca]

Office Location: N/A

Office hours: By appointment. I will be available on Wednesday and Friday from 11.30 to 12.30 for office hours.

One to one zoom meeting can also be arranged outside this time limit for office hours. Please e-mail me to set a time.

COURSE DESCRIPTION

Academic calendar: 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. Mutually Exclusive: MBIO 1010, MBIO 1011, MBIO 2100, MBIO 2101

General: 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.

COURSE TECHNOLOGICAL REQUIREMENTS

Required textbook: Nester's Microbiology: A Human Perspective 10th ed. (9th or earlier editions also acceptable.

Tortora's Microbiology: An introduction 11th ed may also be used)

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

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

EXPECTATIONS AND POLICIES

Lecture format: In general, lectures via PowerPoint presentation will be delivered synchronously, asynchronously and recorded, but the instructor may post asynchronous video recordings in the event of technical disruptions or other unusual circumstances. After each class, the video recording will be posted on UMLearn. Please note that uploading these recordings is done as a courtesy for students, and technical disruptions may occasionally prevent a recording from being uploaded. **Complete lecture notes will not be provided in the event of a missed class, even if a recording cannot be uploaded. It is your responsibility to catch up on the missed lecture material and notes.**

The lecture PowerPoint slides will be posted on UM Learn in advance for each class to provide students with a template to fill in with their own style of note-taking. As such, lecture slides are not complete, and therefore should not be used as a substitute for attending a class. Students are expected to attend all Zoom sessions, and are encouraged to ask questions on the lecture material during lecture. Students are advised that their voices and/or images, when unmuting and/or turning on video during class, will be recorded unless the instructor is requested to halt recording by the student.

Note: With the current pandemic situation, the University followed public health guidance and asked courses to be delivered remotely where possible. The University continues to monitor the developments of the latest pandemic situation and will provide an update as to whether in-person activities can be safely offered as per public health guidelines after February 26. Like all other University-wide announcements, we anticipate that the activity plans (be they remote or in-person) for after February 26 will be made by email as well as posted on the University website. Please keep an eye on these two sources for the announcement over the next few weeks as well as direction from your course instructor.

Professional Conduct: It is recognized that these are unusual circumstances, and some adjustments need to be made 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 all members of 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 properly clothed, not being impaired, and participating respectfully. **Essentially, if you wouldn't do it in an in-person class, don't do it in a virtual setting.** Please familiarize yourself with the [UM Respectful Work and Learning Environment \(RWLE\)](#) Section 2.5(c) of the [Student Non-Academic Misconduct and Concerning Behaviour Procedure](#) describes types of inappropriate or disruptive behaviour.

Emails: The University requires all students to activate an official U of M email account, which should be used for all communications between yourself and the university, including all your instructors. Emails sent to instructors from an email account other than the University of Manitoba account will automatically be deleted. Students are expected to practice professional email etiquette. All email communications should comply with the University's policy on electronic communication with students, which can be found at:

http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html. You can expect me to answer your email no later than two business days after it was received. Generally, however, I will reply to emails sent during working hours by the end of the day, and emails sent after hours or on the weekend by the end of the next business day.

Note: inappropriate in-class/remote behaviour and/or emails that are perceived to be harassing or threatening in nature may be reported to the departmental Associate Head (Undergraduate Affairs) for assessment, and possibly to the Faculty of Science for potential disciplinary action.

Privacy Concerns: This course is delivered, in part, remotely using a video conferencing software platform, and you may be required to install University approved software on your device and you may be required to have and use a webcam. During videoconferencing, your personal information, in the form of your name, image, and any questions or answers you pose during classes, may be collected under the authority of The University of Manitoba Act. The information you provide will be used by the University for the purpose of supporting student learning.

Exams for Winter term courses may be invigilated online. If your exam is invigilated online, you may be required to install University approved software on your computer and you may be required to have and use a webcam while taking the exam. During proctoring, your personal information, in the form of your name and image may be collected under the authority of The University of Manitoba Act. Your personal information will not be used or disclosed for other purposes, unless permitted by The Freedom of Information and Protection of Privacy Act (FIPPA). If you have any questions about the collection of your personal information, contact the Access & Privacy Office (tel. 204-474-9462), 233 Elizabeth Dafoe Library, University of Manitoba, Winnipeg, MB, R3T 2N2. If you have any questions regarding your online lectures or exams, please contact me.

Image Recordings: Screen shot capture and/or video recording of material presented by the instructor and/or classmate is strictly for **personal use only** due to copyright and/or privacy concerns. **Posting of images that include lecture material and/or instructor and/or classmates on the internet is strictly prohibited. Recording and/or distribution of exam material in any format is strictly prohibited.**

Academic Integrity: Guidelines are stated in your calendar regarding University policy with respect to academic dishonesty (particularly plagiarism and cheating) and behavior and absence from final exams. All work is to be completed independently unless otherwise specified. Please remember that group projects are subject to the rules of academic dishonesty, and every group member must ensure that a group project adheres to the principles of academic integrity. The Faculty of Science web page has detailed information regarding discipline (<https://catalog.umanitoba.ca/undergraduate-studies/policies-procedures/student-discipline-bylaw/>) along with a video message (<https://youtu.be/Ok-lilm4SeE>). Please read/watch and follow these guidelines, and ask if you have any questions.

Student Accessibility Services: The University of Manitoba is committed to providing an accessible academic community. [Students 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.

Student Accessibility Services

520 University Centre

Phone: (204) 474-7423

Email: Student_accessibility@umanitoba.ca

Medical notes: In the event that the student is unable to complete the work of any or all course components due to unforeseen circumstances (illness, family emergency, etc.), then the student must contact the instructor who, in consultation with the Department Head and Faculty of Science, will decide on alternative arrangements. Students who are unable to meet a course requirement due to medical circumstances are currently not required to submit medical notes. However, please note that circumstances that result in missing multiple course components (e.g. assignments/exams/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)/Limited Access Policy (LAP):

VW: Students have the opportunity to voluntarily withdraw (VW) from this course; **please refer to the University website for the deadline date.** 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.

COURSE EVALUATION

Grading: 2 midterm exams, each worth 25% of the final grade and a final exam worth 50% of the final grade.

Mid-term exams: The midterm exams will be multiple choice and open book. If remote learning after the break, midterm exams will be delivered via the UMLearn Quiz function. No deferral Mid-term will be allowed. If you miss one Midterm, the percentage will go towards final exam.

All exams will be held in accordance to stated Academic Integrity policies (<https://umanitoba.ca/student-supports/academic-supports/academic-integrity>). In completing the open book exams, copying from, or collaborating with, anyone (including peers or strangers online, in social media, or discussion forums) constitutes a case of academic dishonesty and could have serious consequences. The goal in this course (as in all academic pursuits) is to learn. If you are unclear on what is acceptable or what constitutes plagiarism, please ask for clarification. Any documentation efforts to retain and/or distribute the questions via screen captures, saving to files, taking photos, keeping notes of the exam contents, or any other manner of recording/distribution, strictly prohibited and subject to disciplinary action.

Deferred mid-terms will not be offered. 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%. If both are missed, the final exam will be 100% of your grade. 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.

Please refer to the University's policies regarding deferred Final Examinations

Determination of final course grade: Letter grades are assigned taking into consideration the grade distribution in the class and the University of Manitoba's descriptors A+ (Exceptional), A (Excellent), B+ (very good), B (Good), C+ (Satisfactory), C (Adequate), D (Marginal), F (Failure); see <http://umanitoba.ca/student/records/grades/686.html>.

Letter Grade	Percentage out of 100	Final Grade Point
A+	90-100	4.5
A	80-89	4.0
B+	75-79	3.5
B	70-74	3.0
C+	65-69	2.5
C	55-64	2.0
D	50-54	1.0
F	Less than 50	0

CLASS/LECTURE/EXAM SCHEDULE

Date	Notes	Evaluation	
		Type of Assessment	Value of Final Grade
January 24th, 2022	First day of the term		
February 22nd - 25th, 2022	Winter Term Break		
March 4th, 2022	You can expect to receive a preliminary grade after writing the midterm, and an adjusted grade (if needed) within 24 hours	Unit 1 Midterm – Tentatively Chapters (1-8)	25%
April 1st, 2022	You can expect to receive a preliminary grade after writing the midterm, and an adjusted grade (if needed) within 24 hours	Unit 2 Midterm – Tentatively Chapters 13-20	25%

April 25th, 2022	Last instructional day for the Winter Term		
April 26th-May 3rd, 2022	Winter Term Examination Period (exact date TBD)	Final Exam – Tentatively Chapters 1-8, and 13-27	50%
	Preliminary grades are not released for the Final Exam. Final letter grades will be released through Aurora.		

Textbook Chapters**Nester 10th ed. Tortora 11th ed.**

(Older editions also acceptable, but chapters may vary)

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

* We will cover approximately two chapters per week, in sequential order. This may not always be the case, and it is the responsibility of each student to find out what was covered in case of a missed class.

Students - UM COVID-19 - Syllabus Insert – January 19, 2022.

The University of Manitoba (the “UM”) is committed to maintaining a safe learning environment for all students, faculty, and staff. Should campus operations change because of health concerns related to the COVID-19 pandemic or other campus-wide emergency, it is possible that this course will move to a fully remote delivery format. Should the instructor be required to stay at home for an extended period and an alternate instructor not be available, the course may move temporarily to a remote delivery format. In that instance, you may be provided with an asynchronous option to minimize the impact the change may have on your schedule.

PPE and Mask Wearing

In a face-to-face environment, our commitment to safety requires students to observe all physical distancing (2m) and personal protective equipment (PPE) guidelines set by the University (<https://umanitoba.ca/coronavirus>)

While on campus and in class, you must wear PPE (Personal Protective Equipment) as stipulated in current [University policies, procedures, and guidelines](#). Students who fail to comply are subject to disciplinary action in accordance with the [Student Discipline Bylaw](#) and the [Non-Academic Misconduct and Concerning Behaviour Procedure](#).

Medical-grade 3-ply masks are available at many locations on campus, including specific classroom locations, designated by your unit, the Elizabeth Dafoe Library (Fort Garry Campus) and the Brodie Centre main doors (Bannatyne Campus). Additional PPE, if necessary for a specific learning environment, will be provided to you by the teaching unit.

If you do not follow masking and other requirements you will be asked to leave the learning space and may only return to the class already in progress when you have complied with these requirements. Repeated issues will result in disciplinary action as previously noted.

Students should not eat or drink during class time.

Illness

Remember: **STAY HOME IF YOU HAVE SYMPTOMS OR ARE ILL.** If you become sick or are required to self-isolate you should notify your instructor by email so you can develop a plan to complete the course learning outcomes while you are absent.

If you have symptoms, do not come to campus or any UM facilities. Complete the [self-assessment](#) on the Manitoba Public Health site and follow the guidelines, which may include booking a COVID-19 test.

What to do if you become ill while at UM:

1. Leave the classroom, lab or workspace immediately. Continue to wear your mask while leaving the premises and/or while waiting for transportation.
2. Perform hand hygiene (soap and water or hand sanitizer) and avoid contact with others, and minimize contact with the physical environment.
3. Once at home, complete the [MB self-assessment](#) and follow the directions that are provided.
4. Inform your supervisor(s), instructor(s) or, if in residence, the appropriate individual.
5. You must remain off campus and all UM facilities until cleared to return in accordance with self-assessment, testing results, or MB Health requirements.

Recommended transportation options (in order):

1. Drive yourself home.
2. Pick-up by family or friend – remember to keep your mask on and to distance as much as possible, and where possible, open a window to improve ventilation.
3. Pickup by taxi/Uber:
 - Remain masked and perform hand hygiene before entering the vehicle.
 - Avoid touching the inside of the vehicle
 - Keep your mask on for the duration of the ride
 - Where possible, open a window to improve ventilation.
4. Winnipeg Transit buses - Winnipeg Transit has indicated that individuals that are ill **must not use Transit**.

Class plan**Class plan for MBIO 1220-AO1**

Feb 11, Friday- chapter 5-live class Zoom class. (<https://zoom.us/j/96805910773>, Meeting ID: 968 0591 0773)

Feb 14, Monday- chapter 6, (Asynchronous class, pre-recorded lecture will be uploaded)

Feb 16, Wed -Chapter 7, (Asynchronous class, pre-recorded lecture will be uploaded)

Feb 18, Friday - Chapter 8, live zoom class, live class Zoom class. (<https://zoom.us/j/96805910773>, Meeting ID: 968 0591 0773)

Reading week break: Feb 22-Feb 25

Feb 28, Monday: chapter 13, live zoom class (<https://zoom.us/j/91325038462> Meeting ID: 913 2503 8462)

March 2, Wednesday: Live Zoom review class for MID (<https://zoom.us/j/96587537049>, Meeting ID: 965 8753 7049)

March 4, Friday- MID

March 7, Mon- chapter 14-Live review class, Q/A session (<https://zoom.us/j/91325038462>, Meeting ID: 913 2503 8462)

March 9, Wed– chapter 15 (Asynchronous class, pre-recorded lecture will be uploaded)

March 11, Fri – chapter 16 (Asynchronous class, pre-recorded lecture will be uploaded)

March 14, Mon- Live class, Q/A session (<https://zoom.us/j/91325038462> Meeting ID: 913 2503 8462)

March 16- Wed- chapter 17 (Asynchronous class, pre-recorded lecture will be uploaded)

March 18-Friday- chapter 18 (Asynchronous class, pre-recorded lecture will be uploaded)

March 21- Monday-Live review class -Q/A session (<https://zoom.us/j/91325038462>, Meeting ID: 913 2503 8462)

March 23- Wed –chapter 19(Asynchronous class, pre-recorded lecture will be uploaded)

March 25- Friday-chapter 20 (Asynchronous class, pre-recorded lecture will be uploaded)

March 28-Monday- chapter 21-live class, Q/A session. (<https://zoom.us/j/91325038462>, Meeting ID: 913 2503 8462)

March 30-wednesday- live review class (<https://zoom.us/j/99854502268>, Meeting ID: 998 5450 2268)

April 1- MID

April 4-Monday- Chapter 22-live class, Q/A session (More 30 mins) (<https://zoom.us/j/91325038462>. Meeting ID: 913 2503 8462)

April 6-Wed-Chapter 24 (Asynchronous class, pre-recorded lecture will be uploaded)

April 8-Fri-Chapter 25 (Asynchronous class, pre-recorded lecture will be uploaded)

April 11-Mon -Chapter 26- (live class, Q/A session (More 30 mins) (<https://zoom.us/j/91325038462>, Meeting ID: 913 2503 8462)

April 13-Wed-Chapter 27-(Asynchronous class, pre-recorded lecture will be uploaded)

April 15, Friday-Live Review class <https://zoom.us/j/97279897389>, Meeting ID: 972 7989 7389

April 18, Monday-- Live Review class , <https://zoom.us/j/97279897389>, Meeting ID: 972 7989 7389

April 20, Wednesday- Live Review class, <https://zoom.us/j/97279897389>, Meeting ID: 972 7989 7389