

**Mechanisms of Microbial Disease**  
**MBIO 3010: A01 Winter 2022: 3 credit hours**

**COURSE SYLLABUS**

**INSTRUCTOR:** Diana Mlinar, M.Sc.  
421 Buller Building  
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**TIME/LOCATION:** Tuesday/Thursday 10:00am-11:15am  
Zoom Lecture Delivery → Live

**OFFICE HOURS:** By appointment only

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**COURSE OBJECTIVE AND DESCRIPTION:**

This course will provide theory and methodology involved in understanding the mechanisms of virulence and pathogenicity of viral and bacterial pathogens. Topics include etiology, pathogenesis, epidemiology, treatment, diagnostics, and control of important infectious diseases in humans. Host-pathogen interactions and immunology will also be discussed.

**TEXTBOOK:**

Mim's Medical Microbiology, 5<sup>th</sup> Edition

This textbook is a recommendation rather than a requirement. All lecture notes will be provided on umlearn. In addition to the provided lecture content, you will be responsible for all material covered during the lecture period.

**LECTURE DELIVERY**

Lectures will be delivered using Zoom. The link and the password to watch the lectures has already been emailed to you. The lectures will be recorded and the link to the recording will be emailed to you at some point after the lecture. Please note that lecture notes will be posted on umlearn in advance of the lecture and will remain available on umlearn for the duration of the term.

## 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.

## 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:** Thursday March 10 2022 10:00 a.m., 75 mins (**in class**).....25%

**Mid-term #2:** Thursday April 7, 2022 10:00 a.m., 50 minutes (**in class**).....25%

**Final Exam:** TBD, 3 hours .....50%

**\*\*Note:** All examinations will be short/long answer format and will be conducted on Zoom. The final exam will be cumulative.

## DEFERRED EXAMINATIONS:

Deferred exams will not be administered. Failure to write the mid-term exam will result in the weight of the mid-term being transferred to the final exam. 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<sup>+</sup>:** 90-100 **A:** 80-89 **B<sup>+</sup>:** 76-79 **B:** 70-75 **C<sup>+</sup>:** 65-69 **C:** 55-64 **D:** 50-54 **F:** <50

## OTHER IMPORTANT DATES:

**February 22-25, 2022:** No Class, Reading Week

**April 15, 2022:** No class, Good Friday

**April 25, 2022:** Last day for voluntary withdrawal

**April 25, 2022:** 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/governance/governing-documents-students>

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://www.sci.umanitoba.ca/wp-content/uploads/2018/11/Acad\\_Dishon\\_TABLE\\_RevCSS\\_AdminC\\_Jul2012\\_WEB.pdf](https://www.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.

## PROFESSIONAL CONDUCT

We recognize 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) <https://umanitoba.ca/about-um/respectful-work-and-learning-environment-policy>

Section 2.5(c) of the Student Non-Academic Misconduct and Concerning Behaviour Procedure describes types of inappropriate or disruptive behaviour

[https://umanitoba.ca/admin/governance/media/Student\\_Non-Academic\\_Misconduct\\_and\\_Concerning\\_Behaviour\\_Procedure\\_-\\_2018\\_09\\_01.pdf](https://umanitoba.ca/admin/governance/media/Student_Non-Academic_Misconduct_and_Concerning_Behaviour_Procedure_-_2018_09_01.pdf)

## 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.

**TOPICS COVERED:**

<b>Topic</b>	<b>Chapter</b>
<b>Innate Immunity</b>	<b>9</b>
<b>Adaptive Immunity</b>	<b>10, 11</b>
<b>Vaccines and Passive Immunization</b>	<b>34, 35</b>
<b>Microbiota and Health</b>	
<b>Background to Infectious Diseases</b>	<b>12</b>
<b>Entry, Exit and Transmission</b>	<b>13</b>
<b>Spread and Replication</b>	<b>15</b>
<b>Parasite Survival and Persistent Infection</b>	<b>16</b>
<b>Infection Mediated Pathology</b>	<b>17</b>
<b>Prions</b>	<b>7</b>
<b>Epidemiology of Disease</b>	<b>32</b>
<b>Diagnosis of Infection</b>	<b>31</b>
<b>Upper Respiratory Tract Infections</b>	<b>18</b>
<b>Lower Respiratory Tract Infections</b>	<b>19</b>
<b>Urinary Tract Infections</b>	<b>20</b>
<b>Sexually Transmitted Diseases</b>	<b>21</b>
<b>Gastrointestinal Infections</b>	<b>22</b>
<b>Central Nervous System Infections</b>	<b>24</b>
<b>Antibiotics</b>	

