

Introductory Virology

MBIO 2420

Instructors: Drayson Graves, Nikolas Akkerman, Scott Bachus

Contacts:

drayson.graves@umanitoba.ca

nikolas.akkerman@umanitoba.ca

scott.bachus@umanitoba.ca

Office: Online – Zoom Link (See UMLearn page)

In-person – By appointment – Please email first

Office hours: Wednesday 2:30PM-3:30PM

Course Description:

This is an introductory course in virology. It will develop basic concepts in virology, principles of virology essential to having a basic understanding of what a virus is, how viruses work, how they subjugate infected cells and replicate. We may also discuss viral pathogenesis and how infected organisms defend against viral infections (time-permitting). This will include not only lectures on how viruses work, but also research that lead to seminal discoveries in virology as well as coverage of important techniques in virology and how they are being applied in research labs to the understanding of viruses. The course will focus exclusively on eukaryotic viruses (with a further focus on mainly human viruses, but other mammalian viruses might be touched upon). We will focus the course on the study and discussion of human adenovirus as a model virus, while discussing how this virus works.

Lecture Format:

In general, lectures via PowerPoint presentation will be delivered synchronously and recorded, but note that asynchronous video recordings may be posted in the event of technical disruptions or other unusual circumstances. After each class, the video recording will be posted on UMLearn. PDF files of 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 not attending a class. Complete lecture notes will not be provided in the event of a missed class; it is your responsibility to catch up on the missed lecture material and notes. Students are expected to attend all Zoom sessions, and are encouraged to ask questions on the lecture material using the chat box function. To facilitate stable internet connection and ensure video quality, students are required to mute audio and video functions while the lecture is being given unless permitted to do so by the instructor. Students are advised that their voices and/or images, when unmuting and/or turning on video during, will be recorded unless the instructor is requested to halt recording by the student.

Presently, the University is expecting that all teaching and examinations will be provided in person starting on the 26th of February. While classrooms have not been assigned yet by the Registrar's Office, these should be assigned in the coming few weeks.

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.

Course Technological Requirements:

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
3. Access to a web-cam and microphone

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 a University of Manitoba account (either @myumanitoba.ca or @umanitoba.ca) 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 sent on a working day within 24 hours, or if sent on a holiday or weekend, within 72 hours.

Note: 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 Fall 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.

Medical notes:

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.

Grading breakdown:

Mid-term 1:	25%	Date: February 18 th
Mid-term 2:	25%	Date: March 25 th (Tentative)
Final exam:	50%	Date: TBD

Mid-terms and final exam will be entirely multiple choice. Midterm 1 will be online, through UM learn, with a time limit of half an hour, with 30 questions. Midterm 2 will be written in-person unless otherwise determined by the university, with 40 questions and a time limit of 50 minutes. The final exam will also be written in-person at the time set by the Registrar's Office unless otherwise determined by the university. It will consist of 100 questions and have a time limit of 2 hours.

Grade distribution guideline:

Letter grades are assigned taking into consideration the University of Manitoba's descriptors A⁺ (Outstanding), A (Excellent), B⁺ (Very Good), B (Good), C⁺ (Satisfactory), C (Adequate), D (Marginal), F (Failure); see <http://umanitoba.ca/student/records/grades/686.html>

A+ – 100-90%; **A** – 89.99%-80%; **B+** – 79.99%-75%; **B** – 74.99%-70%; **C+** – 69.99%-65%; **C** – 64.99%-60%;
D – 59.99%-50%; **F** – 49.99%-0%

There will be NO deferred term test. Missing any exam will result in the missed work's mark value being transferred to the final.

The Faculty of Science regards 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 an exam, copying from another individual, using answers provided by tutors, forging documents, plagiarism, and examination personation. You are directed to the Faculty of Science Academic Dishonesty Webpage (<http://umanitoba.ca/faculties/science/undergrad/resources/webdisciplinedocuments.html>) for more details. Suggested minimum penalties assessed by the Faculty of Science for acts of academic dishonesty are listed on the following page.

Academic Dishonesty:

Guidelines are stated in your calendar regarding University policy with respect to academic dishonesty (particularly plagiarism and cheating), behaviour, 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

(<http://umanitoba.ca/faculties/science/undergrad/resources/webdisciplinedocuments.html>). Please read and follow these guidelines, and ask if you have any questions.

Course topics

- I. Introduction
 - a. Molecular biology and virology background
- II. Concepts in virology (Drayson Graves) – January 28th to February 18th
 - a. Topics covered will include:
 - i. Basic virology concepts and bacteriophages
 - ii. Virology techniques
 - iii. Types of viruses
 - iv. Viral design concepts
 - v. Virus classification

Expected return to in-class lectures, February 28th.

- III. Emerging & Re-Emerging Viruses (Dr. Kindrachuk) – February 28th, March 1st & 3rd

Topics to be covered:

- a. Introduction to emerging & re-emerging viruses
 - i. Orthopoxviruses
 - ii. Influenza viruses
 - iii. Filoviruses
 - b. Viral Outbreak Response Efforts
 - i. Ebola virus: from the field to the laboratory
 - c. Virology within the high-containment laboratory
 - i. Merging basic and clinical research
 - ii. Case study of Ebola virus disease
- IV. In-depth study of specific viruses (Scott Bachus and Nikolas Akkerman) – March 7th to April 25th
 - a. Human adenovirus
 - b. Human papillomavirus
 - c. Herpesviruses
 - d. Rabies
 - e. Others time-permitting

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.**