MBIO 2020: Microbiology II (Winter 2021)

Course Description

Topics will include bacterial growth, chromosome replication, the specifics of transcription and translation and their application to the regulation of microbial gene expression. Families of bacterial viruses and their modes of reproduction will be discussed. Mutation and gene transfer in bacteria will be introduced.

Recommended Texts

Textbook: Brock Biology of Microorganisms, by Madigan, *et al*, 14th edition or higher. (*Not required, but still… just keep the book you used in the previous micro course.*)

Course notes: A complete set of course notes (app. 190 pages) that include all key figures and schemes, as well as minimal explanations and comments are available on UM Learn.

Lab manual: As the entire course will be online this winter including the lab, the lab manual will be made available as a free pdf on the course UM Learn site.

Instructor Contact Information

Lectures: Dr. Pavel Dibrov
Office: No office this winter
Email: Pavel.Dibrov@umanitoba.ca
Phone: better to email

Labs: Dr. Chris Rathgeber
Office: No office this winter
Email: chris.rathgeber@umanitoba.ca
Phone: 204-474-9967
Office hours: Dr. Rathgeber's office hours will be announced on the UM Learn site sometime in the second week of classes.

Teaching assistants

Teaching assistants (TAs) are senior students available to help you primarily with the lab component of the course. Your TA is available to answer questions regarding the lab material, assignments and lab quizzes and exams. Your TA will send you their contact information through UM Learn sometime during the second week of classes. Note that your TA will not be marking your lab assignments (we have separate grader/markers for that.)

Please note: the U of M will only use your university email account for official communications, including messages from your instructors, department or faculty, academic advisors, and other administrative offices. Click this link for more information about the U of M's email policy.

This means that neither instructors nor their TAs will communicate about course material through any social media platform (i.e. Facebook, Telegram, Twitter etc.) If someone joins your Telegram site claiming to be a TA or an instructor, you should assume that it is an imposter and act accordingly.

How the course works

This term the course will be taught fully online, and all course activities, including labs, will take place virtually through the University's learning management system UM Learn, or through the video conferencing program Zoom. You will have to be logged in to a Zoom account to access live lectures and labs. (The free Zoom account is fine.) Please make sure that your visible name matches your name in the official class list, or you may be denied entry.

Lecture material

Lectures will primarily be given as live streams using Zoom. Current links to the Zoom lecture can be found on UM Learn in the 'Lecture material' folder. Live streamed lectures will be recorded and uploaded for later viewing. However, they will only be made available for a few days after the lecture, so you are encouraged to attend the livestream whenever possible.

All live lectures will occur at your scheduled lecture time from 10:30 am to 11:20 am, Monday, Wednesday and Friday.

In addition to live lectures, you will also find a set of course notes on UM Learn in the 'Lecture material' folder. All information in these course notes is examinable, even if it is not covered in lecture.

A number of slides demonstrated during the lectures are not included in the Course Notes. For your convenience, all the slides demonstrated during the lectures will be uploaded for later viewing, as well. Like the videotaped lectures, they will be available for downloading for a few days after each lecture.

Online labs

All labs will be given online this winter, rather than as hands on lab work. There will be eight labs in total, and they will be divided into two types:

1. Four of the labs will be given as asynchronous self-study modules. These labs will be available at the beginning of the week in which they are scheduled, and you can work on them at any time you like, as long as you finish the assignment by the due date posted on UM Learn. (Typically the end of the week in which the self-study module is assigned.)

2. The other four labs will be **synchronous online Zoom sessions**. In these sessions, you will work in a small group to answer a number of short problems based on the previous week's self-study lab. **Attendance at all scheduled online Zoom labs is mandatory**, and you must have a working webcam, microphone, and a device that allows you to work on, edit and share a Microsoft Word file, so that you can contribute to your group's efforts.

3. Note that only those students who actively participate, and are present for the entire time the group is working on the problem set can be given a mark for the online Zoom lab. (i.e. if you're there

for the first hour, but then leave to do something else while your group is stuck finishing the assignment, you will not be given a mark!)

You can find a complete schedule of labs, including dates for the online Zoom labs with mandatory attendance, as well as assignment due dates on UM Learn.

Lab exemptions

Lab exemptions are available to students who have previously taken the course and completed the lab section with a minimum grade of 60% in the lab. For permission to register for the lab exemption, or to see if you qualify, email the lab instructor.

Evaluation and Grading

Marks will be distributed as follows:

Lecture (80%)

- Midterm exam = 20%
- Final exam = 60%

Lab (20%)*

- 4 individual lab assignments (1% each) = 4%
- 4 group lab assignments (1% each) = 4%
- 1 midterm lab quiz = 2%
- Final Lab exam = 10%
    - Both the lab quiz and the lab exam will include a mix of multiple choice and written answer questions. Exact dates and details can be found on UM Learn.

* Note that you must achieve a minimum 10 out of 20 in the lab to pass the course.

Midterm exam: The midterm exam is provisionally scheduled for March 12th, from 10:30 to 11:20 am, online through UM Learn, and will consist of approx. 40 multiple choice questions that must be answered in 50 minutes.

Final exam: The final examination will be given online through UM Learn, and will consist of approx. 80 multiple choice questions that must be answered in 2 hours.

The Registrar's Office is responsible for the final exam schedule which should be available a few weeks after the start of the class. The exact date and time of the final exam will be posted to the course UM Learn site when it is available.

Labs: Check the lab schedule on UM Learn for more information about lab assignment due dates, and for the quiz and exam schedule.

Online invigilation

The midterm, lab exam and final exam for this course may be invigilated through the use of Respondus monitor, Zoom, Microsoft Teams, Cisco WebEx, or another invigilation system of the instructor's choosing. If online

invigilation is used, you will be notified and given a chance to try the online invigilation system beforehand. In the case that online invigilation is used, you will require a working Webcam and microphone to write the examination.

Policy regarding missed quizzes, tests and exams

Midterm exam: There will be no deferred midterm exams. If you are not able to write the midterm exam at the date and time scheduled due to illness or for compassionate reasons, you should contact the lecture instructor within 2 working days of the exam date. The 20% value of the midterm will be re-weighted onto the final exam, so that your exam will be worth 80% of your total grade in the course. (Medical notes are not required this year.)

Lab assignments, quiz and Lab exam: If you miss an assignment, quiz or lab exam due to illness or for compassionate reasons, you must contact the lab instructor within 2 working days to determine the accommodations that can be made. Accommodations may include re-scheduling or re-weighting of the item in question.

Final exam: Deferred final exams can only be arranged by your home faculty. If you miss a final exam for medical or compassionate reasons, you must contact your home faculty within 2 working days, with appropriate documentation to apply for a deferral.

Grading scale

Letter grades will be assigned by taking into consideration the grade distribution in the class and the University of Manitoba's descriptors: A+ (Outstanding), A (Excellent), B+ (Very Good), B (Good), C+ (Satisfactory), C (Adequate), D (Marginal), F (Failure); see https://umanitoba.ca/registrar/grades for more details.

The goal is to provide grades that represent performance in the context of the class; the grades will not be curved to meet an expected distribution, but conversion of percentages to letter grades will be at the discretion of the instructors.

For this course, the grading scheme generally, but not always, will be close to the following: 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% total).

Academic Integrity

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 using unauthorized materials during an exam, copying from another individual, sharing screenshots during exams, using answers provided by tutors, forging documents, plagiarism, and examination personation. Guidelines are stated in your calendar regarding University policy with respect to academic dishonesty (particularly plagiarism and cheating) and behaviour and absence from final exams.

The Faculty of Science web page has detailed information on academic integrity. Please read and follow these guidelines and ask if you have any questions. You are also encouraged to view this video message from Associate Dean Krystyna Koczanski.

All instructors in the Faculty of Science, and their teaching assistants have been instructed to remain vigilant and report all incidents of academic dishonesty. In cases of cheating on lab assignments, or during quizzes and examinations, the assignment or test in question will be given a grade of 0% and the student will be referred to the appropriate authorities for disciplinary action.

Important Information about Delivery Mode:

Since the mode of delivery of this course is online, you must ensure that you can meet the following minimum requirements:

1. A computing device that can be used to create and edit documents
2. An internet connection capable of streaming videos and downloading software, and
3. Access to a webcam and microphone

Click here for an additional list of recommended technologies for remote and online courses at the University of Manitoba.

If you encounter technical difficulties with UM Learn or other University of Manitoba computer services you should contact the IST help desk, which is open Monday to Friday, from 8:00 am to 8:00 pm.

Student Accessibility Services

The University of Manitoba is committed to providing an accessible academic community. Student 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
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