***Instructor:*** Dr. Ann Karen Brassinga [Tel: 204-799-8457; Email: Ann.Brassinga@umanitoba.ca]
***Lecture Time and Virtual Room:*** 11:30 am – 12:20 pm MWF Remote Learning access provided through Zoom videoconference platform. Zoom link details to be provided through class email.
***Virtual Office Hours****:* Generally 12:30-1:30 p.m. daily or by appointment (preferred).
***Required textbook:*** Snyder & Champness *Molecular Genetics of Bacteria*, 5th Edition E-text

**Course Description:** Students will learn in detail the principles underlying molecular mechanisms of bacterial genetics with focus on conjugation, transduction, transformation, recombination, and mobile genetic elements. The roles of these mechanisms in molecular approaches, and in the pathogenesis of select bacterial pathogens, will also be discussed.

**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, and
3. Access to a web-cam and microphone.

**Lecture format and student expectations:** Lecture PowerPoint slides will be posted in PDF format 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.*** The lecture will be delivered synchronously and recorded. After each class, the video recording will be posted on UMLearn for one week only, and then removed.

**Professional conduct and academic integrity:** 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. During virtual settings (class, meeting, exam), students are expected to conduct themselves in a professional and respectful manner as outlined in the following University policies:
1. http://umanitoba.ca/admin/governance/media/Respectful_Work_and_Learning_Environment_RWLE_Policy_-_2016_09_01.pdf
2. https://umanitoba.ca/admin/governance/media/Student_Non-Academic_Misconduct_and_Concerning_Behaviour_Procedure_-_2018_09_01.pdf

**Grade evaluation format:** 1 Assignment (10%), 3 Mid-term exams (15% each; 45% total), and 1 Final Exam (45%)

**Exams:** closed-book exams will be conducted through UMLearn Quiz function in accordance to stated Academic Integrity polices (https://www.sci.umanitoba.ca/students/undergraduate-students/academic-resources/academic-integrity-2/). In completing the exam and/or assignment, copying from anywhere, including other individuals, or resources including the internet 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.*** In the event of one missed exam, the student will have the option of combining the grades of the remaining two exams to account for 45% overall mid-term grade weight or defer the missed grade weight to the final exam weight. For documentation purposes, the student's choice must be emailed to the instructor by Friday, Dec. 11$^{th}$ 5 pm CST (the last day of classes). In the event of two or three missed exams, then the grade weight of the missed exams will automatically be deferred to the final exam weight. Note that the final exam schedule may be worse than your Mid-term exam schedule and for most students, a 45-90% final is not less stressful than one worth 45%. The Faculty of Science regulations apply to all missed final exams.

Letter grades are assigned 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 http://umanitoba.ca/student/records/grades/686.html. The grading scheme generally but not exactly follows that used by the Rady College of Medicine https://umanitoba.ca/faculties/health_sciences/medicine/admissions/8847.html.
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%, or <45% in final exam).

**Student Accessibility Services (SAS)**
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/. Course instructors are willing to meet with Students to discuss the accommodations recommended by Student Accessibility Services.

**Academic dishonesty**
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 (http://umanitoba.ca/admin/governance/media/Student_Discipline_Bylaw_-_2009_01_01.pdf) along with a video message (https://youtu.be/Ok-lilm4SeE). Please read/watch and follow these guidelines, and ask if you have any questions.

**NOTE 1:** Any e-mails must be sent to me from your university email account. E-mails sent to me from an email account other than the University of Manitoba account will automatically be deleted.

**NOTE 2:** Image capture policy – any screen capture of lecture material is strictly for personal use only (i.e. copyrights) and please do not include instructor and/or classmates in the image. Distribution and/or posting of images that include lecture material and/or instructor/classmates on the internet is strictly prohibited. Any screen capture of exam content material is strictly prohibited and subject to disciplinary action.

**Class/Lecture/Exam Schedule**

| ***Date*** | ***Lecture Content***<br>*(The lecture content and schedule is tentative, and thus may be subject to change)* |
|---|---|
| Wednesday, September 9 | Introduction/explanation of course syllabus |
| Friday, September 11 | Review: Nature and Structure of DNA/DNA replication |
| Monday, September 14 | Review: DNA Replication (cont'd) |
| Wednesday, September 16 | Review: Transcription |
| Friday, September 18 | Review: Transcription (cont'd)/Transcriptional Regulation |
| Monday, September 21 | Review: Transcriptional Regulation (cont'd)/Translation |
| Wednesday, September 23 | Conjugation |
| Friday, September 25 | Conjugation (cont'd) |
| Monday, September 28 | Transformation |

| | |
|---|---|
| Wednesday, September 30 | Transformation (cont'd) |
| Friday, October 2 | Transduction |
| Monday, October 5 | Transposition |
| Wednesday, October 7 | Transposition (cont'd) |
| **Friday, October 9** | **Term test #1 (Sept. 11th to Sept 30th lectures inclusive) – 15% of course grade** |
| Monday, October 12 | *Thanksgiving holiday – University closed* |
| Wednesday, October 14 | DNA Repair |
| Friday, October 16 | DNA Repair (cont'd) |
| Monday, October 19 | Recombination and DNA repair |
| Wednesday, October 21 | Recombination and DNA repair (cont'd) |
| Friday, October 23 | Phage Genetics |
| Monday, October 26 | Phage Genetics (cont'd) |
| Wednesday, October 28 | Phage Genetics (cont'd) |
| **Friday, October 30** | **Term test #2 (Oct. 2nd to Oct. 21st lectures inclusive) – 15% of course grade** |
| Monday, November 2 | Plasmid Genetics |
| Wednesday, November 4 | Plasmid Genetics (cont'd) |
| Friday, November 6 | Plasmid Genetics (cont'd) |
| *Monday, November 9* | *Fall Break – no classes* |
| *Wednesday, November 11* | *Remembrance Day – University closed* |
| *Friday, November 13* | *Fall Break – no classes* |
| Monday, November 16 | Bacterial Tools for Genetic Engineering – ***assignment to be given*** |
| Wednesday, November 18 | Bacterial Tools for Genetic Engineering (cont'd) |
| Friday, November 20 | Molecular approaches |
| Monday, November 23 | Molecular approaches (cont'd) – *Voluntary Withdrawal deadline* |
| Wednesday, November 25 | Molecular approaches (cont'd) |
| **Friday, November 27** | **Term test #3 (Oct 23rd to Nov 18th lectures inclusive) – 15% of course grade** |
| Monday, November 30 | Molecular mechanisms of pathogenesis – *Guest lecturer Dr. George Chaconas* |
| Wednesday, December 2 | Molecular mechanisms of pathogenesis (cont'd) |
| Friday, December 4 | Molecular mechanisms of pathogenesis (cont'd) – *Guest lecturer Dr. Denice Bay* |
| Monday, December 7 | Molecular mechanisms of pathogenesis (cont'd) |
| Wednesday, December 9 | Molecular mechanisms of pathogenesis (cont'd) |
| Friday, December 11 | Review for final exam; ***Assignment to be submitted to instructor by email by 5 pm CST – 10% of course grade*** |
| **TBA** | **FINAL EXAM (CUMULATIVE) – 45% of final course grade** |