

MBIO 1410 Introduction of Molecular Biology - Summer 2020

Instructor: Dr. Ann Karen Brassinga [Tel: 204-799-8457; Email: Ann.Brassinga@umanitoba.ca]

Required textbook: "Introduction to Biotechnology" 4th edition by William J. Thieman and Michael A. Palladino. Available as e-text – cost is ~\$60.00 CDN.

Lecture Time: MTWRF 1:00 pm – 2:15 pm, Remote Learning access provided through Zoom videoconference.

Course Description: Students will learn the introductory principles of molecular biology. Major topics will include genetic inheritance patterns, nucleic acid structure, DNA and protein synthesis, DNA repair and recombination, gene transfer, cancer genetics, medical genetics counselling, recombinant DNA technology, biotechnology and genetic engineering applications.

Lecture: Students are expected to attend all Zoom sessions. Lecture notes and supplementary material will be posted on UM Learn. 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.

Marking: Midterm exams (20% each; total 40%), Final Exam (60%)

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>. For this course, a grade of 45% in the final exam is required to pass the course. 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).

Eligibility criteria to take MBIO 1410 for credit for your degree program: Not available to students who have previously obtained credit in, or are currently enrolled in the following courses: i) MBIO 2410 Essentials of Molecular Biology, BIOL 2500 or BIOL 2501 (Genetics I), MBIO 2020 or MBIO 2021 (Microbiology II), former MBIO 2100 (MBIO 2102) General Microbiology A, MBIO 3410 or MBIO 3411 (Molecular Biology).

This course may be used as an elective in an Arts or Science program, but it may not be used to meet a program requirement for an Honours or Major degree program in Microbiology. If you are still uncertain if you can take MBIO 1410 as credit for your degree program, please contact a Faculty of Science or a Departmental Undergraduate advisor.

Students with disabilities are directed to Student Accessibility Services to facilitate the implementation of accommodations. 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 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.

NOTE 1: There will be no deferred term exam. However, you have two options should you miss one:

Option 1: If for some reason you missed the term exam (illness, family emergency, etc.), then the grade weight of the missed mid-term will be automatically added to your final exam weight.

Option 2: If for some reason, you did not do as well as you thought on one or both term exams, you have the option to transfer the grade weight of one or both term exams to the final exam weight. You need to make this decision by 5 pm Friday July 3, 2020 (last day of classes) – this is the deadline date. No exceptions. And no reversal of your decision either – in other words, if you decide to transfer the weight of one or both term exams to the final exam weight, it will be considered as a final and permanent decision on your part.

Note that the final exam schedule may be worse than your midterm schedule and for most students a 75%-100% final is not less stressful than one worth 50%. The Faculty of Science regulations apply to all missed final exams.

NOTE 2: 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 3: Photo policy – Screen shot capture and/or video recording of remote learning material presented by the instructor is strictly for personal use only (i.e. copyrights). ***Posting of images that include lecture material and/or instructor on the internet is strictly prohibited.***

<i>Date</i>	<i>Lecture Content*</i>
Monday, June 1	Course Introduction
Tuesday, June 2	Chapter 1 – The Biotechnology Century and its Workforce
Wednesday, June 3	Chapter 2 – An introduction to Genes and Genomes
Thursday, June 4	Chapter 2 – An introduction to Genes and Genomes (cont'd)
Friday, June 5	Chapter 3 – Recombinant DNA Technology and Genomics
Monday June 8	Chapter 3 – Recombinant DNA Technology and Genomics (cont'd)
Tuesday, June 9	Chapter 3 – Recombinant DNA Technology and Genomics (cont'd)
Wednesday, June 10	Chapter 4 – Proteins as products
Thursday, June 11	Chapter 4 – Proteins as products (cont'd)
Friday, June 12	Review Session I for June 2 nd – 9 th lectures only
Monday, June 15	Term Exam I (June 2nd – 9th lectures inclusive)
Tuesday, June 16	Chapter 5 – Microbial Biotechnology
Wednesday, June 17	Chapter 5 – Microbial Biotechnology (cont'd)
Thursday, June 18	Chapter 6 – Plant Biotechnology
Friday, June 19	Chapter 7 – Animal Biotechnology
Monday, June 23	Chapter 9 – Aquatic Biotechnology
Tuesday, June 24	Chapter 9 – Aquatic Biotechnology/Bioremediation
Wednesday, June 24	Chapter 10 – Bioremediation
Thursday, June 25	Chapter 8 – DNA Fingerprinting and Forensic Analysis
Friday, June 26	Review session II for June 10 th to June 19 th lectures only
Monday, June 29	Term Exam II (June 10th – 19th lectures inclusive)
Tuesday, June 30	Chapter 11 – Medical Biotechnology
<i>Wednesday, July 1</i>	<i>Canada Day – no class</i>
Thursday, July 2	Chapter 11 – Medical Biotechnology (cont'd)
Friday, July 3	Review session for final exam
TBA	FINAL EXAM (CUMULATIVE) ON-LINE FORMAT (60%) – 2 HOURS

The lecture schedule is tentative and may be subject to change.