

2022F Biol 4650 *Issues in Biotechnology* Course Outline

[2022-09-16 submitted to the Department of Biology]

Instructor:	Dr. Wensheng Qin Email: wqin@lakeheadu.ca, biot.teaching@gmail.com Office: CB 4016, Tel: 807-343 8010 ext. 8467
Meeting Time:	10: 00 AM-11: 30 AM
Meeting Days:	Monday & Wednesday
Meeting Place:	RB 1044
Instructional Type:	Lecture
Course ID:	143510
Teaching Assistant (TA)	Sarita Shrestha Email: blebmembers@gmail.com Office: CB 3037, Tel: 807-343 8010 ext. 7141

Textbook: Introduction to Biotechnology 4th Edition Textbook by W. J. Thieman & M. A. Palladino (Pearson). This textbook is not required but you are highly encouraged to purchase a copy of the book.

Introduction to Biotechnology brings the latest information to students who need to understand the science and business of biotechnology. The popular text emphasizes the future of biotechnology and the biotechnology student's role in that future with balanced coverage in basic cell and molecular biology, fundamental techniques, historical accounts, new advances, and hands-on applications. The 4th Edition features content updates in every chapter that reflect the most relevant, up-to-date changes in technology, applications, ethical issues, and regulations. Additionally, every chapter now includes an analytic Case Study that highlights current research and asks students to use what they've learned about the key chapter concepts to answer questions. New Career Profiles, written by biotech professionals and available on the Companion Website along with additional career resources, highlight potential jobs in the biotech industry.

Chapter 1 The Biotechnology Century and Its Workforce

Chapter 2 An Introduction to Genes and Genomes

Chapter 3 Recombinant DNA Technology and Genomics

Chapter 4 Proteins as Products

Chapter 5 Microbial Biotechnology

Chapter 6 Plant Biotechnology

Chapter 7 Animal Biotechnology

Chapter 8 DNA Fingerprinting and Forensic Analysis

Chapter 9 Bioremediation

Chapter 10 Aquatic Biotechnology

Chapter 11 Medical Biotechnology

Chapter 12 Biotechnology Regulations

Chapter 13 Ethics and Biotechnology

Lecturing schedule:

Date	Contents
Week 1	Chapter 3 Recombinant DNA Technology and Genomics
	Chapter 3 Recombinant DNA Technology and Genomics
Week 2	Chapter 4 Proteins as Products
	Chapter 4 Proteins as Products
Week 3	Chapter 5 Microbial Biotechnology
	Chapter 5 Microbial Biotechnology
Week 4	Chapter 6 Plant Biotechnology
	Chapter 6 Plant Biotechnology
Week 5	Chapter 7 Animal Biotechnology
	Chapter 7 Animal Biotechnology
Week	Reading Week (October 10-16, 2022)
	Reading Week (October 10-16, 2022)
Week 6	Chapter 9 Bioremediation
	Midterm exam (25%), covers the chapters 3-6

Week 7	Chapter 9 Bioremediation
	Chapter 9 Bioremediation
Week 8	Chapter 11 Medical Biotechnology
	Chapter 11 Medical Biotechnology
Week 9	Guest lecture #1, Nov. 7, 2022 (Invited speaker)
	Guest lecture #2, Nov. 9, 2022 (Invited speaker)
Week 10	Chapter 11 Medical Biotechnology
	Chapter 11 Medical Biotechnology
Week 11	Student PPT presentation
	Student PPT presentation
Week 12	Student PPT presentation
	Student PPT presentation
Week 13	Student PPT presentation
	Final exam (25%), covers the chapters 7, 9, 11

Grades: Total 100% (Midterm exam 25%, Final exam 25%, PPT presentation 20%, Critiques of two assigned journal papers 16% (8% each), Two quizzes from two guest presentations 8% (4% each), Attendance 6%).

Notes:

[1] The midterm exam (25%) consists of multiple choices and short or long answer questions from Chapters 3-6.

[2] The final exam (25%) consists of multiple choices and short or long answer questions from Chapters 7, 9, 11.

[3] The class attendance (6%).

[4] For individual student PPT presentation (20%): Each student selects one topic of your own choice in the current biotechnology field and makes high-quality PPT slides (no more than 20 slides for your presentation). Each student presents for 15 minutes and followed by 5 minutes of questions and answering. The slides have to be emailed to both the TA

blebmembers@gmail.com and the instructor biot.teaching@gmail.com forty-eight (48) hours before your presentation, with email subject: Your complete name (First and Last Name) followed by your complete “topic title”).

Your presentation will be evaluated by all your classmates plus the teaching assistant (TA) and instructor. We use the average marks of the students, TA, and instructor evaluations. The presentation will be in alphabetical order by the students' last names (will be provided to you or as shown in the attached table. The presentation evaluation criteria form is attached below for your reference. The final student list form will be sent to you before the presentations.

[5] Writing critiques of two assigned journal papers 16% (8% each). The Basic Guidelines for Your Critique Writing of the Two Assigned Papers will be posted in the D2L website. The two papers will be posted in the D2L website as well. The deadline for emailing your critiques to both the TA blebmembers@gmail.com and the instructor biot.teaching@gmail.com is November 30, 2022. Any assignment marks will be deducted 20% per day after the deadline.

[6] Two quizzes 8% (4% each) from 2 guest presentations from other institutions.

Presentation Evaluation Form

Evaluator's Name _____ Student Number _____

Participants - Your opinion matters to us. Using the survey instrument below, please circle one answer for each question. There is space below for additional comments. If you run out of space, please feel free to write on the back of this form. Thanks for attending today.

The presenter		Marks	Your evaluation
1	Delivered the materials in a clear and structured manner	Up to 2%	
2	Was knowledgeable about the topic and any related issues	Up to 2%	

3	Maintained my interest during the entire presentation	Up to 2%	
4	Answered questions effectively	Up to 2%	
5	Was enthusiastic about the topic	Up to 2%	
6	Was well organized and prepared	Up to 2%	
The presentation			
7	Was concise and informative	Up to 2%	
8	Contained practical examples and useful techniques or knowledge that applied to current work	Up to 2%	
9	Had effective visual aids	Up to 2%	
10	Provided a great deal of novel information	Up to 2%	
Total		Up to 20%	

Submission of your evaluation marks (at the end of the class, you must submit the following form before December 7, 2022, I will send you an updated form later).