**2023F Biol 4650 Course Outline**

Course Title: Biol 4650 Issues in Biotechnology

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| Instructor: | Dr. Wensheng Qin (biot.teaching@gmail.com)<br>Office: CB 4016, Tel: 807-343 8010 ext. 8467 |
| Meeting Time: | 1:00-2:30 PM |
| Meeting Days: | Monday & Wednesday |
| Meeting Place: | AT 1007 |
| Instructional Type: | Lecture |
| Course ID: | 147282 |
| Teaching Assistant (TA) | Banchamlak Kassaun (Biotechnology PhD Student)<br>Email: bkassaun@lakeheadu.ca |

Textbook: Introduction to Biotechnology 4th Edition Textbook by W. J. Thieman & M. A. Palladino (Pearson). This textbook is not required to buy it 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
The textbook has 13 chapters, 10 chapters (3-12) will be lectured in class.

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 | Oct 9-15 Fall Reading Week without Class) |
| Week 6 | Chapter 7 Animal Biotechnology |
| | Midterm exam (40%) (October 23, 2023, Monday), cover chapters 3-7 |
| Week 7 | Chapter 8 DNA Fingerprinting and Forensic Analysis |
| | Chapter 8 DNA Fingerprinting and Forensic Analysis |
| Week 8 | Chapter 9 Bioremediation |
| | Chapter 9 Bioremediation |
| Week 9 | Chapter 10 Aquatic Biotechnology |
| | Chapter 10 Aquatic Biotechnology |
| Week 10 | Chapter 11 Medical Biotechnology |
| | Chapter 11 Medical Biotechnology |
| Week 11 | Chapter 11 Medical Biotechnology |
| | Chapter 11 Medical Biotechnology |
| Week 12 | Chapter 12 Biotechnology Regulations |

| 2023 Fall Term Courses | |
|---|---|
| First Day of Classes | Tuesday, September 5, 2023 |
| Final Day of Classes | Monday, December 4, 2023 |
| Final Date to Register (Add) | Monday, September 18, 2023 |
| Final Date to Withdraw (Drop) | Friday, November 3, 2023 |
| Examination Period | Thursday Dec. 7, 2023 - Sunday Dec. 17, 2023 (11 Days) |
| Exam Contingency Date | Monday, December 18, 2023 |

Grades: Total 100% (Midterm exam 40%, Final exam 40%, Guest presentation quizzes 10%, Class attendance 10%).

Notes:
[1] The midterm exam (40%) consists of multiple choices and short or long answer questions from the Chapters 3-7.

[2] The final exam (40%) consists of multiple choices and short or long answer questions from the Chapters 8-12.
[3] The class attendance (10%).
[4] The quizzes 10% from the guest presentations from other institutions.
[5] Some bonus points may be awarded to the students, when necessary, for example, if the class average marks are too low. Each bonus point can value more or less than 1%.

| Lakehead | Grading System | Biol 4650 Grading Plan (only for your reference) | Grading Scheme |
|---|---|---|---|
| A+ | 90-100 | ~20% of the Students | 20% x 95 = 19.00 |
| A | 80-89 | ~30% of the Students | 30% x 85 = 25.50 |
| B | 70-79 | ~30% of the Students | 30% x 75 = 21.50 |
| C | 60-69 | ~10% or less of the Students with C or Fail | 10% x 65 = 6.50 |
| Fail | 01-59 | ~10% or less of the Students with C or Fail | 10% X 55 = 5.50 |
| | | According to our department advice, a class average should be around 70-75%. Thus, we will have class average no more than 78%. If the class average is too high, the marks will be reduced by percentage. | *Average by calculation = 78%. |