



蘇州大學
Soochow University

BIO 370 Molecular Biology

Summer 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email: TBA

COURSE OBJECTIVES

The course will cover topics such as DNA replication, transcription, translation, gene expression, and regulation, as well as the techniques used in molecular biology research. This course will provide students with a strong foundation in the principles and techniques of molecular biology .

Upon Completion of this Course, students will be able to:

1. Understand the structure and function of DNA and RNA
2. Explain the processes of DNA replication, transcription, and translation
3. Understand the regulation of gene expression
4. Understand the techniques used in molecular biology research
5. Apply the principles of molecular biology to real-world problems

PREREQUISITES

BIO 203 Genetics

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

| ITEM | POINTS |
|------------|-----------|
| Quizzes | 20 Points |
| Midterm 1 | 20 Points |
| Midterm 2 | 20 Points |
| Final Exam | 40 Points |



Total

100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F$.

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Molecular Biology of the Cell, 6th Edition, by Alberts et al.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

| MODULE | TASKS |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module 1 | Topics: Topic 1: Introduction to Molecular Biology Topic 2: History of Molecular Biology Topic 3: Molecular Biology Techniques Topic 4: The Central Dogma of Molecular Biology Assessments: Quiz#1 |
| Module 2 | Topics: Topic 5: Nucleic Acids Topic 6: DNA Structure and Function Topic 7: RNA Structure and Function Topic 8: DNA Replication Assessments: Quiz#2 |
| Module 3 | Topics: Topic 9: Transcription Topic 10: RNA Processing and Translation Topic 11: Gene Expression and Regulation Topic 12: Prokaryotic Gene Expression Assessments: Midterm#1 |



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|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module 4 | Topics: Topic 13: Eukaryotic Gene Expression Topic 14: Epigenetics and Chromatin Structure Topic 15: Molecular Biology Techniques Topic 16: DNA Cloning Assessments: Midterm#2 |
| Module 5 | Topics: Topic 17: Polymerase Chain Reaction (PCR) Topic 18: DNA Sequencing Topic 19: Applications of Molecular Biology Topic 20: Biotechnology and Genetic Engineering Assessments: Final Exam |

ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the



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5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be deemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.