

BIOLOGY SYLLABUS

Lecturer: Dr. Nguyen Quynh Uyen

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I. COURSE OBJECTIVES

Understand basic biological concepts and principles as follows:

1. Organization and functions of the organisms at molecular, cellular, and higher levels
2. The principles of evolution, genetics, ecology, and their inter-relationship
3. Plants' and animals' anatomy and physiology
4. Impact of humans in shaping the world's environment and the conservation of resources and organisms

II. TEXTBOOK:

Biology: Life on Earth with Physiology. Audesirk, T., Audesirk, G., & Byers, B. 12th edition.
ISBN 10: 0134813448/ISBN 13: 9780134813448

Publisher: Pearson, 2019

III. COURSE SCHEDULE

Week	Content	Reading materials
1	Lecture 1: Introduction of biology	Chapter 1
2	Lecture 2: Chemical basics of life Biological molecules	Unit 1: chapters 2 and 3
3	Lecture 3: Cell structure and function	Unit 1: chapters 4 and 5
4	Lecture 4: Energy flow in the life of a cell Photosynthesis and Metabolism of glucose	Unit 1: chapters 6, 7, and 8
5	Lecture 5: Cellular reproduction	Unit 2: chapters 9 and 10
6	Lecture 6: Patterns of inheritance	Unit 2: chapter 11
7	Lecture 7: DNA, gene expression, and regulation	Unit 2: chapters 12 and 13
8	Lecture 8: Principles of evolution and the history of life	Unit 3: chapters 15 and 18
9	Lecture 9: Species and Biodiversity Midterm examination	Unit 3: chapters 16-17 and 19 - 25
10	Lecture 10: Animal behavior and Population dynamics	Unit 4: chapters 26-27

11	Lecture 11: Communities and Ecosystems	Unit 4: chapters 28-31
12	Lecture 12: Plant anatomy and physiology	Unit 6
13	Lecture 13: Animal anatomy and physiology	Unit 5
14	Lecture 14: Biotechnology Final examination	Unit 2: chapter 14
15	Laboratory 1: General principles in working at laboratory Basic methods of working with bacteria	
16	Laboratory 2: Method for isolating bacteria from samples	
17	Laboratory 3: Microscope and its use in observing bacteria	
18	Laboratory 4: Spectrophotometer and its use for measuring optical density (OD) of bacterial growth	
19	Laboratory 5: Serial dilution and calculation of CFU (Colony Forming Unit)	
20	Student presentations	

IV. EVALUATION AND GRADE:

- ✓ **Quizzes** (10 %): There will be informal verbal quizzes
- ✓ **Attendance and Participation** (10%): Attendance in both lectures and laboratory sessions is mandatory. If a student has more than three absences, with or without the faculty's permission, he will not be allowed to take the final exam and will receive an F for the course.
- ✓ **Presentation** (20%): Topics will be assigned to groups
- ✓ **Midterm exam:** 30%
- ✓ **Final exam:** 30%
- ✓ **Grade scale:**
 - A 90 % - 100 %
 - B 80 % - 89 %
 - C 70 % - 79 %
 - D 60 % - 69 %
 - F Under 60 %