

## **INTRODUCTION TO BIOLOGY A**

Marcelo Ehrlich, Ayala Lampel, Tsaffrir Zor, Vered Padler-Karavani

Fall Semester

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Office Hours: By appointment

### Short description:

This course introduces students to the basic principles of cell biology and biochemistry. Topics covered include: basic chemistry principles and the macromolecules that build living organisms; enzymes, cell structure and function; energy production by the mitochondria and chloroplast; intercellular communication and signal transduction; the flow of genetic information – from gene to protein; molecular biology approaches in research, the cell cycle; Mendelian genetics. The course text book is “Biology” by Campbell. 11th edition:

1. Chapter 2: The Chemical Context of Life. A Chemical Connection to Biology (AL)
2. Chapter 3: Water and Life. The Molecule That Supports All of Life (AL)
3. Chapter 4: Carbon and the Molecular Diversity of Life. Carbon: The Backbone of Life (AL)
4. Chapter 5: The Structure and Function of Large Biological Molecules (AL)
5. Chapter 5: The Molecules of Life (AL)
6. Chapter 6: The Energy of Life (TZ)
7. Chapter 7: A Tour of the Cell. The Fundamental Units of Life (TZ)
8. Chapter 10: An Introduction to Metabolism, Cellular Respiration and Fermentation (TZ)
9. Chapter 11: Photosynthesis (VPK)
10. Chapter 8: Membrane Structure and Function (ME)
11. Chapter 9: Cell Communication (ME)
12. Chapter 12: The Cell Cycle (ME)
13. Chapter 13: Meiosis and Sexual Life Cycles (ME)
14. Chapter 14: Mendel and the Gene Idea (VPK)
15. Chapter 15: The Chromosomal Basis of Inheritance (VPK)
16. Chapter 16: The Molecular Basis of Inheritance (VPK)
17. Chapter 17: Gene Expression: From Gene to Protein (TZ)
18. Chapter 17: The Flow of Genetic Information (TZ)
19. Chapter 18: Regulation of Gene Expression (TZ)
20. Chapter 19: Genetic engineering (VPK)

Assessment\* :

Minor assignments:

NA.

Midterm:

In-class exam, 10% of the final grade.

Final requirement:

In-class exam, 90% of the final grade.

Participation:

No grade on participation.

Attendance:

Attendance is mandatory. Students are permitted a maximum of three absences. Students who do not meet the attendance requirements will be considered not to have fulfilled the obligations of the course.

Academic conduct:

Plagiarism is taken extremely seriously. Any instance of academic misconduct which includes: submitting someone else's work as your own; failure to accurately cite sources; taking words from another source without using quotation marks; submission of work for which you have previously received credit; working in a group for individual assignments; using unauthorized materials in an exam and sharing your work with other students, will result in failure of the assignment and will likely lead to further disciplinary measures.

Additional requirements: TBD

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\* Please note that if distance learning is required, the assessment procedure, modes of assessment and weightings may be changed.