

SYLLABUS

SCIN 2010: BIOLOGY

Fall 2007
Monday 9:10 – 10:30am
Wednesday: 9:10 – 10:30am
Room #223

INSTRUCTOR:

Dr. Mugur A. Roz
Office Hours: Friday 2 – 5pm
mroz@students.hchc.edu
(617) 850-1545

1. Course Description

This course will provide an introduction to the structure, function and evolution of living organisms, on their three levels of organization: cells, organisms and populations. It will develop a functional understanding of life sciences, the interrelatedness of their various scientific disciplines, and the interactions of science, technology and society. The students will not only learn about their biological universe, but also develop an attitude of inquiry and critical thinking. Basic knowledge of the didactics and history of biology and the philosophy of science will also be introduced.

2. Course Topics and Dates

Monday, September 10

Welcome and overview of the course. Biology - The Science of Life. What is Life?

Wednesday, September 12

Science and the Scientific Method. Science and Non-science. Critical Thinking.

Monday, September 17

Fundamental Concepts in Biology.

Wednesday, September 19

The Chemical Basis of Life. The Molecules of Life.

Monday, September 24

Cell Structure and Function. Metabolism. Photosynthesis.

Wednesday, September 26

Cell Division. Mitosis and Meiosis.

Monday, October 1

Mendelian Genetics: Traits and Patterns of Inheritance.

Wednesday, October 3

Chromosomes, Genes and the DNA Structure

Monday, October 8

Columbus Day, No classes

Wednesday, October 10

Gene Expression and Regulation. Protein Synthesis.

Monday, October 15

Biotechnologies: Cloning, Stem Cells and Gene Therapy.

Wednesday, October 17

Ethical, Religious and Legal Issues in Biology and Medicine

Monday, October 22

MID - TERM

Wednesday, October 24

Evolution: The Origins of Life and Proof of Evolution

Monday, October 29

Evolution: Mutation and Natural Selection

Wednesday, October 31

Intelligent Design: The Creation Science

Monday, November 5

Alternative Theories: The Pink Ant

Wednesday, November 7

Viruses, Prokaryotes and Eukaryotes. Plants Evolution

Monday, November 12

Veteran's Day, No classes

Wednesday, November 14

Invertebrates and Vertebrates. Animal Evolution.

Monday, November 19

Biology Lab – Computer-Simulated Biology Experiments

Wednesday, November 21

Biology Lab – Computer-Simulated Biology Experiments

Monday, November 26

Fundamentals of Human Biology

Wednesday, November 28

Elements of Human Physiology

Monday, December 3

Populations and Ecosystems

Wednesday, December 5

Ecology. Global Warming

Friday - Monday, December 7 – 10

Study days - by Monday, December 10 the Final Paper is due.

TBA, December 11 – 14

FINAL EXAM

3. Student Requirements

- *Attendance*: class attendance is required and monitored. Only one absence is allowed, with prior permission from the instructor. Each additional absence will impact negatively the final grade.
- *Class participation*: students are required to actively participate in the class in a constructive way. Reading the required materials before the class ensures an effective participation - which impacts positively the final grade.
- *Examinations*: there will be two graded examinations:
 - Mid-Term (one hour) on Monday, October 22, covering the material up to October 17 (inclusive);
 - Final (one hour), TBA, covering the material studied after the Mid-Term.
- *Final Paper*: each student will be required to submit one paper (5-6 pages, Times New Roman, 12, double space) on a biology topic of her/his choice. The topic and title will be agreed upon with the instructor. The paper is due no later than Monday, December 10.

4. Texts and Learning Resources

Campbell, N.A., Reece, J.B., Taylor, M.R. and Simon, E.J. 2005, *Biology: Concepts & Connections*, 5th Edition, Benjamin Cummings, Boston.

Barton, N.H., Briggs, D.E.G., Eisen, J.A., Goldstein, D.B., Patel, N.H. 2007, *Evolution*, First Edition, Cold Spring Harbor Laboratory Press, New York.

Scott, E.C. 2004, *Evolution vs. Creationism*, University of California Press, Berkeley.

Ruse, M. 2003, *Darwin and Design*, Harvard University Press, Cambridge.

Starr, C. and Taggart, R. 2005, *Biology: The Unity and Diversity of Life*, 11th Edition, Thomson/Brooks Cole, Belmont.

<http://mugur.roz.md/biology>

5. Grading Plan

Attendance	10%
Participation	10%
Midterm	30%
Final Exam	30%
Final Paper	20%

6. Classroom & Laboratory Rules of Conduct

- Always be on time for class!
- No food is allowed.
- Cell phones have to be turned off.
- Do not bring your laptop / palmtop / PDA.