

Biology 103- Basic Ideas of Biology

University of Kentucky

Independent Study Program, Lexington KY, 40506

16 Assignments, 3 Credit hours

Introduction

The purpose of this course is to acquaint you with some of the major themes of modern biology. Biological processes range from the interaction of molecules over milliseconds to the interaction of climate and entire communities of organisms over millions of years. Therefore, we will not be able to cover biology comprehensively. However, we will cover a number of topics that are essential to an understanding of how biology contributes to our lives. These topics include the scientific method, the chemistry of the cell, basic genetics, principles of evolution and ecology, and selected aspects of human physiology. At the end of this course you should be familiar with the foundations of modern biology, as well as better prepared to understand new developments that will affect our lives in the future.

Required Text

Essential Biology with Physiology. 2004. Neil A. Campbell, Jane B. Reese and Eric J. Simon. 1st edition. Benjamin Cummings, 1301 Sansome Street, San Francisco, CA 94111.

Guidelines for completion of the Independent Study course

- Carefully read all regulations provided by the University of Kentucky Independent Study Program. All administrative decisions will be handled by the Independent Study Program subject to these regulations.
- Assignments should be submitted via email to the instructor (and copied to the Independent Study Program) or submitted via mail to the Independent Study Program office, which then forwards them to the instructor.
- Assignments 4, 8, 13, and 16 are review assignments; the other assignments are multiple-choice assignments.
- You may submit up to 4 assignments per week (3 multiple-choice assignments and one review assignment).
- **You must pass the final exam (D or better) to receive a passing grade in the class, regardless of performance on previous assignments.**

Grading

12 assignments (25 pts. each)	300 pts.
4 review assignments (100 pts. each)	400 pts.
Final exam	150 pts.
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Total	850 pts.

Final Grades *

A	850 -765 pts.
B	764 - 680 pts.
C	679 - 595 pts.
D	594-510 pts.
E	Below 510 pts.

* You must pass the final exam to receive a passing grade in the class, regardless of performance on previous assignments. A grade below 60 % (90/150 pts. on the final exam) will result in an E for the course.

Tips for successful completion of Biology 103

- For each assignment, begin by reading the chapter, and complete the checkpoints and self-quizzes provided in the textbook as you go along.
- Attempt to complete each assignment without the aid of the textbook, then use the text as a reference to check your answers. When you are confident in your answers, submit them for grading.
- Always review your graded multiple-choice assignments as soon as you get them back. Review these assignments before attempting review assignments and the final exam.
- Before taking the final exam, you should be able to answer the questions from all assignments as well as self-quizzes and checkpoints without referring to the text; **you will not be able to use your textbook or any other materials for the final exam.**
- Questions on the final will be of similar difficulty to assignment questions, but may cover material in the readings but not tested in the previous assignments. The final exam will include both multiple-choice and essay format questions.
- The independent study format puts a good deal of responsibility on you, the student, for developing mastery of the material covered. A good tool for studying is to imagine possible questions as you read the textbook. When you reach the end of a section or paragraph, stop and ask yourself – what could the instructor ask about this paragraph? Write down questions and answers. For example, in Assignment One after reading about ecosystems on page 3-4, you could imagine questions about the definitions of ecology or ecosystems, or list additional examples of producers and consumers.
- Because of the nature of this independent study course, you can completely control your performance on the chapter assignments – so check and recheck your answers before submitting them for grading. You also control how much thought and effort you put into the review assignments, which include integrative essays. Through your careful work on the multiple-choice and review assignments, you can potentially build a comfortable margin before approaching the final exam.
- If you have questions on an assignment, a topic covered in the readings, or a grading issue, feel free to contact the instructor via email or by mail through Independent Study. Though this is an independent study course, you still have the opportunity to ask questions or obtain clarifications. If you have questions about the administration of the course itself, you can also contact the Independent Study Program.

Schedule of Assignments

(16 total plus final exam, including 12 multiple-choice and 4 review assignments)

<u>Assignment No.</u>	<u>Topics</u>	<u>Reading</u>
The Cellular Basis of Life		
1	Scientific Method Scope of Biology Biological Molecules	Chapter 1, 1 - 18 Chapter 3, 35 - 51
2	Cell Structure and Function	Chapter 4 Chapter 5
3	Replicating Cells	Chapter 8
4	<i>Evaluation and Synthesis (Review Assignment)</i>	
Genetics and Genes		
5	Patterns of Inheritance	Chapter 9
6	From Genes to Proteins	Chapter 10
7	Gene Regulation and Biotechnology	Chapter 11 Chapter 12
8	<i>Evaluation and Synthesis (Review Assignment)</i>	
Evolution and Ecology		
9	Microevolution and Adaptation	Chapter 13
10	Macroevolution and Biodiversity	Chapter 14
11	Population Ecology	Chapter 18
12	Communities and Ecosystems	Chapter 19
13	<i>Evaluation and Synthesis (Review Assignment)</i>	
Human Physiology: Signaling		
14	Hormones and Reproduction	Chapter 25 Chapter 26
15	The Nervous System	Chapter 27
16	<i>Evaluation and Synthesis (Review Assignment)</i>	
Final Exam	(Schedule through the Independent Study Program office)	All course readings