

MIDSTATE COLLEGE
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Fall 2002 update

Course number & Name: LS 110 CONCEPTS OF BIOLOGY

Credit hours: 6 quarter hours **Method of Delivery:** classroom

Text(s) & Manual: Life on Earth, 3rd Ed, 0-13-065309-8

Author(s): Audesirk, Audesirk and Byers

Publisher: Prentice Hall, 2003

Course Description: (IAI L1 900)

Concepts of Biology is an introductory course in the basic biological principles aimed at understanding life processes common to living things. Major areas of emphasis will include cellular biochemistry, cell structure, genetics, differentiation, the plant and animal kingdoms, and ecology.

Requirements for Completing the Course: The final grade average for this course will be based on class participation, weekly homework assignments, discussion topics, chapter critiques, laboratory reports and a mid-term and final examination.

Topics: Topics to be covered in this course include: the structure and life of cells, DNA and inheritance, plant anatomy and physiology, animal anatomy and physiology, and ecology.

Course Objectives: Upon completion of this course, the student will be able to:

1. Examine the structure and life of cells
2. Explain gene expression, regulation, and inheritance
3. Describe the principles of evolution
4. Explain plant anatomy and physiology
5. Explain animal anatomy and physiology
6. Describe the global ecology

Midstate Grading scale:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

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Instructor Information: Patricia Smalley, (309) 692-4092, psmalley@midstate.edu
Office: bookstore, Office hours: M-Th 8:00 to 2:30

Materials needed for this course: For this course students will not need any special material.

References and Required Reading Lists:

Kaufman, P.B. *Plants – Their Biology and Importance*. New York: Harper & Row, 1989.

Power, M., et al. "Challenges in the Quest for Keystones." *Bioscience*, September 1996.

Stern, C., and Sherwood, E.R. *The Origin of Genetics: A Mendel Source Book*. San Francisco: W.H. Freeman, 1966.

Wilson, E.O. *The Diversity of Life*. New York: W.W. Norton & Company, 1992.

Participation Requirements/Policies and Procedures: Homework and assignments must be submitted on time or one point per day that the paper is late will be subtracted from the final grade.

Assessment of learning/Methods of evaluating student performance: The mid-term and final exams for the course will consist of short answer and multiple choice questions. They will include topics discussed in class, information in the text book as well as current event topics submitted by fellow students. The paper should be from 3 to 5 pages with references. All laboratory reports should include an introduction, methods, data, results and conclusions.

Grading Specifications:

Grading Scale:	1000 – 900 points = A
	899 – 800 points = B
	799 – 700 points = C
	699 – 600 points = D

Final grades will be based on the following:

Chapter critiques	100 points
Homework	100 points
Discussion topics	75 points
Research paper	150 points
Lab reports	300 points
Final exam	150 points
Participation	125 points

Examination Information: The mid-term and final examinations will consist of short answer and multiple choice questions.

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Class Schedule/Course Outline:

WEEK

- 1 Introduction to atoms, molecules, and the structure and function of the cell membrane.

Assignment: Read chapters 1, 2 and 3 (pages 1 to 49)

Answer the following review questions

Page	Questions
11	3, 4, & 5
34	1 and 7
48	2 and 5

- 2 Introduction to the global environment and ecosystems.

Assignment: Read chapters 4, and 5 (pages 51 to 79)

Answer the following review questions

Page	Questions
66	2 and 4
78	2, 4 and 5

- 3 Understanding photosynthesis and cellular respiration

Assignment: Read chapters 6 & 7 (pages 81 to 107)

Answer the following review questions

Page	Questions
81	3 and 4
107	3, 4, and 7

First current event topic for discussion due by the end of next week

- 4 Analyze the structure of DNA and cell reproduction

Assignment: Read chapters 8, 9, & 10 (pages 111 to 185)

Answer the following review questions

Page	Questions
120	4 and 5
136	2, and 8
157	1, 6, and 7
158	

current event due

- 5 Examine patterns of inheritance

Assignment: Read chapters 11, & 12 (pages 161 to 205)

Answer the following review questions

Page	Questions
211	9
203	1, 7, 8, and 9

Lab assignment on "world appreciation" due

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WEEK

- 6 Learn about the principles of evolution and diversity

Assignment: Read chapters 13, 14, 15, & 16 (pages 209 to 308)

Answer the following review questions

Page	Questions
224	1, 2, 3, 5, and 6
243	1, 2, 3, and 8
268	4, 5 and 6
307	1, 3, 7, and 11

Second topic for discussion due this week.

- 7 Examine plant anatomy and physiology

Assignment: Read chapters 17 & 18 (pages 313 to 356)

Answer the following review questions

Page	Questions
331	1, 2, 5, and 6
355	7

Lab assignment due

- 8 Investigate animal anatomy and physiology

Assignment: Read chapters 19, 20, & 21 (pages 359 to 415)

Answer the following review questions

Page	Questions
369	1, 2, and 6
392	2, 3, 7, and 11
414	4 and 5

Third topic for discussion due this week

- 9 Study about the immune response , the endocrine and nervous systems

Assignment: Read chapters 22, 23, and 24 (pages 417 to 483)

Answer the following review questions

Page	Questions
436	1, 2, 3, 4, 5, 8, 10, and 11
453	1, 8, and 9
481	3, 6, 10, and 15

Paper due

- 10 Analyze animal reproduction, development and behavior

Assignment: Read chapters 25, & 26 (pages 485 to 538) post critique

Answer the following review questions

Page	Questions
511	1, and 10
536	3, 4, 5, 6, and 7

Final lab assignment due "salt tolerance in corn plants"

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WEEK

11 Become informed the ecology of the planet

Comprehend what makes a sustainable future for human society

Assignment: Read chapters 27, 28, 29, & 30 (pages 567 to 635)

Answer the following review questions

Page	Questions
557	1, 4, and 5
578	1, 3 and 6
599	3, and 5
633	1, 3, 5,6, 10, and 19

12 FINAL