BIOL 1306

Biology for Science Majors I Credit: 3 semester credit hours

Prerequisite: Passed the reading and writing entrance exams for LIT. And Math 1314 College Algebra competed already or co-enrolled.

Co-requisite: BIOL 1106 Biology for Science Majors I lab

Course Description

BIOL 1306 Biology for Science Majors I (lecture)
This lecture-based course accompanies BIOL 1106, Biology for Science Majors I lab. This lecture course provides a survey of biological principles with an emphasis on fundamental principles of living organisms including physical/chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics and scientific reasoning are included.

Required Textbook and Materials

1. Biology, Seventh Edition,
Publisher: Campbell, Reece, and Mitchell, The Benjamin/Cummings Publishing Company, Inc.,
Language: English
ISBN-20050-8053-7146-X

Objectives

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Upon successful completion of this course, students will:

1. Describe the characteristics of life.
2. Explain the methods of inquiry used by scientists.
3. Identify the basic requirements of life and properties of the major molecules of life.
4. Compare and contrast the structures, reproduction and characteristics of viruses, prokaryotic cells and eukaryotic cells.
5. Describe the structure of cell membranes and the movement of molecules across a membrane.
6. Identify the substrates, products and important chemical pathways in metabolism.
7. Identify the principles of inheritance and solve genetic problem.
8. Identify the chemical structures, synthesis and regulation of nucleic acids and proteins.
9. Describe the unity and diversity of life and evidence for evolution through natural selection.

Core Objectives

1. Critical Thinking Skills: To include creative thinking, innovation, inquiry, and

analysis, evaluation and synthesis of information

2. Communication Skills: To include effective development, interpretation and expression of ideas through written, oral, and visual communication
3. Empirical & Quantitative Skills: To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusion
4. Teamwork: To include the ability to connect choices, actions, and consequences to ethical decision-making

Course Outline

List of topics that should be covered in this course:
Chapters in the book that SHOULD be covered either in whole or in part:
Chapters 1-12

I. Intro to Life
   A. Characteristics of Life
   B. Viruses and Non-Living Things
   C. Prokaryotic and Eukaryotic cells
   D. Properties of Molecules needed for Life

II. Scientific Inquiry
   A. Methods
   B. Reasoning
   C. Inquiry used by scientists

III. Cells
   A. Membranes
   B. Organelles
   C. Chemical pathways of metabolism
   D. Nucleic acids and proteins

IV. Genetics
   A. DNA
   B. Heredity
   C. Punett squares and problem-solving

V. Metabolism (Krebs, mitochondria, etc)

VI. Theories of Evolution
   A. Darwin
   B. Natural selection
   C. Diversity of Life

Grade Scale

900 – 1000	A
800 – 899	B
700 – 799	C
600 – 699	D
599 or below	F

Course Evaluation

Final grades will be calculated according to the following criteria:

1. Four Unit Tests	60%
2. Paper	10%
3. Presentation	20%
4. Course Assignments	10%

Course Requirements

1. Written paper. Due on 8/23/2014
2. Presentation. Due Nov 28, 2013

Course Policies

1. No food, drinks, or use of tobacco products in class.
2. Beepers, telephones, headphones, and any other electronic devices must be turned off while in class.
3. Do not bring children to class.
4. No late assignments will be accepted.
5. Students that miss a test must make up the test the day they return to class. It is the student's responsibility to make arrangements to make up test.
6. Attendance Policy. Two absences are allowed. If a student is tardy to class or departs early three (3) times, it will be equal to one (1) absence. Each absence beyond two absences will result in a 5 point deduction from your final grade.
7. The student is responsible for initiating and completing the drop process. A student who stops coming to class and fails to drop the course, will earn an 'F' in the course.
8. Additional class policies as defined by the individual course instructor.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for

reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule

Week	Topic	Reference
Week 1	Living Things versus Non-living	Textbook
Week 2	Chemistry of Life	Textbook
Week 3	Properties of Molecules of Life	Textbook
Week 4	Scientific Inquiry and Methods	Textbook
Week 5	**Test 1**	Class Handout
Week 6	Eukaryotes	Textbook
Week 7	Prokaryotes	Textbook
Week 8	Cells	Textbook
Week 9	Cell organelles	Textbook
Week 10	**Test II**	Class Handout
Week 11	Metabolism	Textbook
Week 12	Krebs cycle	Textbook
Week 13	Genetics	Textbook
Week 14	Natural Selection and Life Diversity	Textbook
Week 15	**Test III and Presentations**	Class Handout
Week 16	**Comprehensive final**	Class Handout

Contact Information:

Instructor: Stephanie Lanoue

Office: MPC 237

Telephone: (409) 880-2935

E-mail: slanoue@lit.edu

Office Hours: 10-11 a.m. MW; 3-4 p.m. MW; 11-3 p.m. TR; Fri 1 – 2 pm

This course will be web enhanced utilizing the Black Board platform

The 'base' syllabi plus additional pages will be linked to the faculty member's webpage.