

COURSE SYLLABUS

YEAR COURSE OFFERED: **2016**

SEMESTER COURSE OFFERED: **SUMMER**

DEPARTMENT: **BIOLOGY**

COURSE NUMBER: **1308**

NAME OF COURSE: **Biology for Non-Science Majors**

NAME OF INSTRUCTOR: **TBD**

The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Learning Objectives

Upon successful completion of this course, students will be able to

1. Identify the aspects of life that relate to energy use, evolution, and the environment.
2. Identify the major biological macromolecules and how they relate to cellular structure.
3. Describe the flow of energy in natural systems using respiration and photosynthesis.
4. Describe the major evolutionary developments across plant and animal phyla.
5. Demonstrate how living organisms interact with one another and their environment.

Core Objectives (CO)

Biology for Non-Majors addresses the following core objectives to ensure students develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in their lives.

- Critical Thinking Skills - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- Communication Skills - to include effective development, interpretation and expression of ideas through written, oral and visual communication
- Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- Team Work - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Major Assignments/Exams

The course components below are designed to meet the course objectives.

COURSE SYLLABUS

- **Exams:** there will be three in-class exams during the semester. Exams will consist of multiple choice, short answer and essay questions covering material presented in lectures. There will also be a cumulative final given during finals week.
- **Homework assignments:** there will be periodic problem assignments that will support the material being presented in class.

Learning Outcomes	CO	Assessment Methods	Criteria/Targets
1. Identify the aspects of life that relate to energy use, evolution, and the environment.	CT COM	Pre- and post-course instruments will be used to track student success in mastering the learning outcomes.	≥75% of students will demonstrate >20% improvement between pre-test scores at beginning of course and post-test scores at the end.
2. Identify the major biological macromolecules and how they relate to cellular structure.	CT COM	Quizzes and exams, with questions directed toward specific topics embedded within each exercise to evaluate specific sub-objectives.	≥70% of students will answer the target questions correctly.
3. Describe the flow of energy in natural systems using respiration and photosynthesis.	CT EQS	Assignments and embedded exam questions that test the student's ability to determine the amount of energy produced and how that energy is used in respiration and photosynthesis.	≥70% of students will answer the target questions correctly.
4. Describe the major evolutionary developments across plant and animal phyla.	COM TW	Students will work in groups to produce diagrams showing phylum-level relatedness and evolutionary developments.	≥75% of student groups will complete the diagrams and get a minimum of 70% of the material correct.
5. Demonstrate how living organisms interact with one another and their environment.	COM CT	Assignments and embedded exam questions that test the student's ability to determine and evaluate human impacts on ecosystems.	≥70% of students will answer the target questions correctly.

COURSE SYLLABUS

Required Reading

“Biology” by OpenStax College (Rice University).

Recommended Reading

N/A

List of discussion/lecture topics

- What is life?
- Chemistry of life
- Biological macromolecules
- Cells and cell structures
- Metabolism and respiration
- Photosynthesis
- Flow of genetic information
- Cell division
- Principles of inheritance
- Evolution through natural selection
- Other evolutionary mechanisms
- Plant diversity
- Animal diversity
- Ecological principles
- Climate
- Population and community ecology
- Conservation biology