

COURSE DESCRIPTION

Dept., Number	BISC 160	Course Title	Biological Sciences I
Semester hours	3	Course Coordinators	Paul K. Lago, PhD, Professor and Chair Lucile M. McCook, PhD, Instructor, Curator of Pullen Herbarium

Current Catalog Description

A comprehensive treatment of the major principles of modern biology. Intended primarily for biology majors and minors and pre-professional biomedical students.

Textbook

Eldra Solomon, Linda Berg, and Diana Martin. *Biology*, 8th edition, Brooks and Cole, 2007.

References

Course website: <http://www.olemiss.edu/courses/bisc160/>

Course Outcomes

Upon successful completion of this course, the students:

1. have a basic understanding of the scientific method;
2. understand the Central Dogma of modern biology; that is, how genetic information is coded and transformed, by transcription and translation, into the structure of proteins, including enzymes, which determine the structure, physiology, and behavior of living organisms;
3. know the basics of Mendelian and human genetics;
4. be familiar with the basic biochemical processes shared by all living organisms;
5. understand how living organisms obtain and utilize energy.

Relationship between Course Outcomes and Program Outcomes

The ABET/CAC criteria for computer science require 30 credit hours of science and mathematics appropriate for the discipline. The BSCS program meets this criterion by requiring 14 hours of natural science courses intended for majors in those fields, including a two-course sequence with associated laboratories in one field, and 18 hours of mathematics beyond the precalculus level. Biology 160 and 162 and their associated laboratories, Biology 161 and 163, form one option for satisfying the laboratory science requirement. The course outcomes are related to the expectations for the role of natural science in the BSCS curriculum.

Prerequisites by Topic

Minimum ACT mathematics score of 22 (SAT 510) or completion of College Algebra (Math 121).

Major Topics Covered in the Course

1. Organization of life
2. Chemical basis of life
3. Organic compounds
4. Organization of the cell
5. Biological membranes
6. Energetics and enzymes
7. Cellular respiration
8. Photosynthesis
9. DNA replication
10. Chromosomes and mitosis
11. Gene expression
12. Gene regulation
13. Chromosomes and meiosis
14. Heredity
15. Human genome
16. Population genetics
17. Evolution
18. Speciation and macroevolution

Assessment Plan for the Course

The instructor assesses the student performance related to the course outcomes by using examinations.

How Data in the Course are Used to Assess Program Outcomes (unless adequately covered already in the assessment discussion under Criterion 4)

The conduct of this course is not governed by the ABET program faculty. No data are collected that are used to assess program outcomes directly.

Estimate Curriculum Category Content (Semester hours)

Science 3 hours