SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES
Sciences
Revision Date: 07-01-23

I. CATALOG DESCRIPTION

Course Number:	BIOS1010
Course Title:	General Biology
Prerequisite(s):	None
Recommendations:	High school biology and meet college required assessment minimum score.
Catalog Description:	This course covers fundamental processes of cells and organisms, cell structure, genetics, biotechnology, evolution, classification, diversity, and interaction of organisms at the molecular, cellular, organismic, ecosystems, and biosphere level. It is designed as both a course for non-majors and as a foundation course for those planning additional work in biology (may or may not transfer as a program requirement for biology majors). Includes a lab.
Credit Hours:	4.0
Class Hours:	45
Lab Hours:	30
Total Contact Hours:	75

II. COURSE OBJECTIVES: *Course will*:

A. Provide a broad knowledge base sufficient to understand core biological concepts.
B. Foster critical thinking skills in examining biology-related issues as they relate to societal and individual problems.
C. Relate basic biological concepts to common experience.
D. Illustrate how the process of science can be utilized as part of problem-solving strategies.
E. Introduce students to biological laboratory techniques.
F. Teach skills in quantitative and qualitative analysis, scientific collaboration, and effective communication.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. Student Learning Outcomes: *Student will be able to*:
- **1.** Demonstrate and explain scientific theories and methodologies.
- **2.** Describe the characteristics common to living things, and the differences among organism groups in the domain/ kingdom classification system.
- **3.** Demonstrate a working knowledge of plant, animal and prokaryotic cell structure and function.
- **4.** Explain the chemical basis of life, including atomic and molecular structure, overview of metabolic pathways, molecular basis of genetic material and protein synthesis.
- **5.** Describe the genetic principles of Mendelian inheritance, meiosis, mitosis, chromosome structure, mutagenesis, and concepts of modern biotechnology.
- **6.** Explain the interactions and adaptations of plants and animals within their respective ecosystems and biosphere.
- **7.** Describe the theories of biological/scientific evolution and the genetic, morphological, fossil, and historical evidence supporting these theories.

B. General Education Learning Outcomes
- **1**. GELO #3: Critical Thinking & Problem Solving
  Outcome: Collect, identify, interpret and analyze data.
  Outcome: Synthesize information to arrive at reasoned solutions to problems.
  Outcome: Evaluate ideas presented in writing, media, speech, or artistic presentations.

Outcome: Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.
Outcome: Acquire and integrate knowledge and construct relationships across disciplines.

2. GELO #5: Analytical, Quantitative, and Scientific Reasoning
Outcome: Apply mathematical and scientific methods to solve problems from an array of contexts and everyday situations.
Outcome: Understand and create logical arguments supported by quantitative and scientific evidence and communicate those arguments in a variety of formats.
Outcome: Effectively develop strategies, algorithms, or experiments (or performing experiments) to better describe the systems or to solve the problems.
Outcome: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce a meaningful outcome.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

A. Scientific Methods
B. Cell Structure/Function
C. Cell Chemistry/Metabolism
D. Classical / Molecular Genetics and Biotechnology
E. Diversity and Classification
F. Ecology and the Environment
G. Evolutionary Theories

V. INSTRUCTIONAL MATERIALS

A. Required Text(s):
1. Simon. *Biology: The Core, Plus Mastering Biology with Pearson e-text -- Access Card Package.* 2nd ed. Pearson, 2017. ISBN-13: 978-0-13-416699-5.
2. Leiser. *General Biology Laboratory Exercises*. 6th ed. Pearson Custom, 2015. ISBN 13: 9781323030271.

B. Other Resources:
None

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:
1. Lecture
2. Discussion
3. Demonstration
4. Application
5. On-Line
6. Distance Education

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:
1. Exams
2. Quizzes, including online quizzes via the PREP-U web site
3. Homework from lecture and lab

B. SCC GRADING SCALE

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

None