COURSE SYLLABUS

LAST REVIEW	Fall 2022	
COURSE TITLE	General Biology	
COURSE NUMBER	BIOL-0121	
DIVISION	Math, Science, Business	s & Technology
DEPARTMENT	Biology	
CIP CODE	24.0101	
CREDIT HOURS	5	
CONTACT HOURS/WEEK	Class: 4	Lab: 2
PREREQUISITES	None	
COURSE PLACEMENT	None	

COURSE DESCRIPTION

General Biology is an introductory course in biology for non-majors. In this class students will explore fundamental biological principles characteristic of all living things. The course consists of lecture and laboratory components that together introduce the student to the scientific method (experimental and observational science), levels of organization and emergent properties of life, molecular and cell biology, bioenergetics, reproduction, genetics, evolution and ecology through the lens of everyday life.

KANSAS SYSTEMWIDE TRANSFER: BIO1010/1011/1012

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

General Education Learning Outcome

- Basic Skills for Communication
- Mathematics
- Humanities

Natural and Physical Sciences

] Social and Behavioral Sciences

Institutional Learning Outcomes

 \boxtimes Communication

 \boxtimes Computation and Financial Literacy

- Critical Reasoning
 -] Technology and Information Literacy

Community and Civic Responsibility

Personal and Interpersonal Skills

TEXTBOOKS

http://kckccbookstore.com/

METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE

- I. What is Life?
 - A. Nature of Science
 - B. Scientific Method

II. Levels of Organization and Emergent Properties

- A. Homeostasis
- B. Growth and Development

III. Bioenergetics

- A. Enzymes
- B. Metabolism
- C. Cellular Respiration
- D. Photosynthesis

IV. Growth and Development

- A. Mitosis and Meiosis
- B. Differentiation/development
- C. Diversity of reproductive strategies
- V. Genetics
 - A. DNA and RNA
 - B. Chromosomes and Inheritance
 - C. Mendelian Genetics and Inheritance Patterns
- VI. Evolution and Diversity in Life
 - A. Natural selection
 - B. Speciation
 - C. Diversity of life/classification
- VII. Principles of Ecology
 - A. Ecosystem organization
 - B. Ecological interactions
 - C. Environmental issues

VIII. Lab Topics/Skills:

- A. Microscopy Skills
- B. Quantitative measurement skills incorporating the metric system
- C. Analytical and statistical skills including presenting and/or interpreting graphs, tables, etc.
- D. Experience with living organisms
- E. Identification and proper use of laboratory equipment including the most current technology available
- F. Basic biochemistry
- G. Organismal and cellular structure and function
- H. Classification/taxonomy
- I. Evolution/natural selection
- J. Genetics

COURSE LEARNING OUTCOMES

Upon successful completion of this course, the student will:

- A. Demonstrate an understanding of the nature of science, including scientific method
- B. Demonstrate an understanding of the levels of organization and emergent properties of life, including Chemical, Cellular, Organ/Organ system, Organismal, Ecological
- C. Demonstrate an understanding of bioenergetics, including Enzyme Activity, Metabolism, and Cellular Respiration/Photosynthesis
- D. Demonstrate an understanding of the importance of reproduction in maintaining the continuity of life, including Mitosis, Meiosis, Differentiation/Development, and Diversity of Reproductive Strategies
- E. Demonstrate an understanding of applying principles of genetics to unity and diversity of life, including Classical Genetics, and Molecular Genetics
- F. Demonstrate an understanding of discussing evolution as the mechanism of change in biology, including Natural Selection, Speciation, and Diversity of Life/Classification
- G. Demonstrate an understanding of the principles of ecology, iIncluding Ecosystem Organization, Ecological Interactions, and Environmental Issues
- H. Laboratory topics/skills, ncluding Microscopy, quantitative Measurement Skills incorporating the metric system, Analytical and Statistical Skills including presenting and/or interpreting graphs and tables, experience with living organisms in the laboratory and/or field setting, and ildentification and proper use of laboratory equipment

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-ofconduct.pdf College Catalog https://www.kckcc.edu/academics/catalog/index.html

College Policies and Statements

https://www.kckcc.edu/about/policies-statements/index.html

Accessibility and Accommodations

https://www.kckcc.edu/academics/resources/student-accessibility-supportservices/index.html.