

## LABETTE COMMUNITY COLLEGE BRIEF SYLLABUS

### **SPECIAL NOTE:**

This brief syllabus is not intended to be a legal contract. A full syllabus will be distributed to students at the first class session.

### **TEXT AND SUPPLEMENTARY MATERIALS USED IN THE COURSE (if any):**

Please check with the LCC bookstore <http://www.labette.edu/bookstore> for the required texts for this class.

**COURSE NUMBER:** BIOL 120 (Lecture and Lab)

**COURSE TITLE:** BIOLOGY

**SEMESTER CREDIT HOURS:** 5

**DEPARTMENT:** Biological Science

**DIVISION:** General Education

**PLACEMENT TEST LEVEL:** General Education Course Placement

**PREREQUISITE:** None

**REVISION DATE:** 3/2013

### **COURSE DESCRIPTION:**

This course presents a study of the basic concepts of living organisms using an evolutionary approach with emphasis on classification, inheritance, and the ecology of plants and animals. This course is intended for students whose concentration is biology and related disciplines with emphasis on knowledge of the scientific method and the chemical components and functions of cells, and tissues and organisms structure and function. Laboratory exercises are designed to emphasize and support the course concepts and stress the scientific methods of investigation.

### **COURSE OUTCOMES AND COMPETENCIES:**

**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.  
Kansas Regents Shared Number Course BIO 1010**

**Students who successfully complete this course will be able to:**

1. Define, analyze, and apply the characteristics of life, scientific method, basic chemistry of life, cell structure and function, and the nature of science to life.
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- Analyze and comprehend the scientific process.
- Identify the scientific methods and the step involved.

2. Understand, evaluate, and apply the levels of organization and emergent properties of life to the world we live in.

- Analyze the chemical organization of life.
- Interpret the cellular organization and the importance in life.
- Understand the organs/organ systems in the living world and analyze them.
- Comprehend the various structural details at the organismal level.
- Interrelate and understand the ecological concepts of the living organisms.

3. Apply and possess the knowledge of enzymes, understand enzymatic activity, and the characteristics of bioenergetics.

- Comprehend the structure and mechanism of enzyme activity.
- Apply, understand and attain the knowledge of metabolism and all the pathways, which lead to homeostasis.
- Know and compare cellular respiration and photosynthesis, and understand the processes of glycolysis, Krebs cycle, electron transport chain and fermentation.
- Understand photosynthesis and all metabolic pathways in plants and other photosynthetic organisms.

4. Understand, evaluate, and analyze the importance of reproduction in maintaining the continuity of life.

- Comprehend the various phases of mitosis (somatic cell division) and meiosis (gamete cell division, with the phases and chromosomal changes and reduction of chromosomes).
- Compare and analyze meiosis and mitosis.
- Gain the knowledge of differentiation/development of living organisms through the process of fertilization, morphogenesis and organogeny.
- Comprehend the diversity of reproductive strategies in various living organisms and be able to compare single celled organisms to multi-cellular organisms.

5. Evaluate, understand, and apply genetics and the unity and diversity of life.

- Understand classical genetics, and apply them to higher living organisms.
- Comprehend molecular genetics at the level of the molecules and understand the complexity of DNA in the living world and recombinant DNA.

6. Understand and discuss evolution as the mechanism of change in Biology.

- Understand the process of Darwin's evolution, natural selection, and the origins of life.
- Explain speciation, and compare how species vary from one another.
- Describe the diversity of life and classifications of living organisms.

7. Understand and be able to discuss the principles of ecology.

- Define Ecosystem organization.
- Identify and evaluate ecological interactions.

- Summarize, discuss, and explain the various environmental issues.