SYLLABUS

DATE OF LAST REVIEW: 02/11/2013

CIP CODE: 24.0101

SEMESTER: DEPARTMENT SYLLABUS

COURSE TITLE: LIFE AND THE ENVIRONMENT WITH LAB (TELECOURSE)

COURSE NUMBER: BIOL 0119t

CREDIT HOURS: 5

INSTRUCTOR: DEPARTMENT SYLLABUS

OFFICE LOCATION: DEPARTMENT SYLLABUS

OFFICE HOURS: DEPARTMENT SYLLABUS

TELEPHONE DEPARTMENT SYLLABUS

EMAIL: DEPARTMENT SYLLABUS

KCKCC-issued e-mail accounts are the official means for electronically communicating with our students.

PREREQUISITE(S): none

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, http://www.kckccbookstore.com for the required texts for your particular class.

COURSE DESCRIPTION: This course is an introduction to the structural organization and functional process of living systems. The basic concepts of biology at the cellular, organ, system, and population levels are emphasized. Genetics and mammal systems are taught as well. Included are laboratories using photomicrographs, simulated blood typing, osmosis and diffusion, a pulse rate and fish homeostasis, taste receptor, and genetics lab exercises. Students may not receive credit for both BIOL 119 and BIOL 121

METHOD OF INSTRUCTION: Laboratory activities, A variety of methods is used. This includes, but is not limited to: lecture, videos,
COURSE OUTLINE:
Videos:
I. The Unity and Diversity of Life
II. Chemical Foundations of Life
III. Secrets of the Cell
IV. The Power of Metabolism
V. Energy In--Energy Out
VI. Generations: Mitosis and Meiosis
VII. Patterns of Inheritance
VIII. DNA: Blueprint of Life
IX. Proteins: Building Blocks of Life
X. Genetic Problems
XI. Mitochondria – Powerhouse of the Cell
XII. Viruses, Bacteria, and Protistans
XIII. Fungi, Plants, and Animals
XIV. Plant Cell Structure
XV. Plant Reproduction - Mitosis
XVI. Animal Structure
XVII. Circulation: A River of Life
XVIII. Immunity – Role of White Cells
XIX. Respiration
XX. Digestion and Fluid Balance
XXI. The Neural Connection
XXII. Endocrine Control: Systems in Balance
XXIII. Animal Reproduction and Development
XXIV. Populations and Communities
XXV. Ecosystems and the Biosphere
XXVI. The Human Factor
XXVII. Heart Function
XXVIII. Stress Manager
XXIX. Four Chambered Heart
XXX. Systems Working Together

EXPECTED LEARNER OUTCOMES:

A. The student will list and describe characteristic elements, processes, and features common to all life.
B. The student will explain the life processes in animals and/or plants.
C. The student will describe the basic anatomical and physiological features of the human body and/or other mammals.
D. The student will summarize the principles of basic genetics with applications to various plants and animals.
E. The student will discuss the 5 Kingdoms of living organisms.
F. The students will develop the ability to make informed decisions about their health and environment.

**COURSE COMPETENCIES:**
*The student will list and describe characteristic elements, processes, and features common to all life.*

1. The students will list and define and/or describe characteristic elements, processes, and features common to all life.
2. The students will define elements, atoms, molecules, and cells.
3. The students will be able to name some of the organelles indicated on a diagram of a typical cell; and describe what life processes occur in each one.
4. The students will be able to define ATP, and discuss its role in energy metabolism.
*The student will explain the life processes in animals and/or plants.*
5. The students will summarize and write the photosynthesis reaction as an equation.
6. The students will describe what proteins are made from.
7. The students will describe where proteins are assembled in a cell.
8. The students will describe how proteins are modified once they are assembled in the cell.
9. The students will be able to recognize that bacteria, as prokaryotes, are the simplest of cells.
10. The students will be able to describe the functions of the cell nucleus and cytoplasmic organelles.
11. The students will be able to know and explain the significance of mitosis and meiosis.
12. The students will be able to describe the function of testosterone in the male.
13. The students will be able to describe the function of estrogen and progesterone in the female.
14. The students will be able to describe the significance of ovulation and know the day that it occurs in the female menstrual cycle.
15. The students will describe the fungi, plants, and animal types of nutrition.
16. The students will be able to discuss and explain the role of chloroplasts in photosynthesis.
17. The students will be able to write and summarize the equation for aerobic respiration.
18. The students will be able to discuss the differences between bacterial, plant, and animal cells.
*The student will describe the basic anatomical and physiological features of the human body and/or other mammals.*
19. The students will define and name the basic functions of an animal’s four main tissues in the body.
20. The students will define the organs of the circulatory system. They will state the main functions of arteries, arterioles, capillaries, veins, and venules.
21. The students will define white blood cells. They will describe their role in immunity by phagocytosis and making antibodies.
22. The students will name the primary organs of the digestive system. They will define the key functions of these organs. They will name the kinds of breakdown products that are small enough to be absorbed across the intestinal lining and into the internal environment.
23. The students will name the main endocrine glands and state where each is located in the human body as well as in other mammals.
24. The students will able to label and state the function of each organ in mammalian male and female reproductive systems.
25. The students will define an organ system and name organs in the system chosen to describe.
26. The students will be able to define tissues, organs, and organ systems.
27. The students will be able to explain how sperm are released from the male and what are the components of semen.
28. The students will be able to explain why fertilization usually occurs in the fallopian tube.
29. The students will be able to discuss the events and the hormones involved in the female menstrual cycle.
30. The students will describe the features of the respiratory surface that are common to all respiratory systems.
31. The students will be able to know the functions and components of mammalian blood.
32. The students will be able to list the three types of muscle and their locations.
33. The students will define the difference between these terms:
   a. Dominate and recessive genes
   b. Homozygous and heterozygous
   c. Genotype and phenotype
34. The students will define somatic cells and gametes.
35. The students will be able to define a DNA molecule and explain its role in inheritance.
36. The students will describe the types of organisms classified in the Kingdom Protista.
37. The students will be able to describe the structure of prokaryotic and eukaryotic cells.
38. The students will be able to define what consumers, producers, and decomposers are and give examples of each.
39. The students will be able to define and give examples of populations, communities, ecosystems; and what the biosphere is.
40. The students should be able to define what stress is and how it affects their lives.
41. The students will describe what occurs during a heart attack and bypass surgery.

ASSESSMENT OF LEARNER OUTCOMES:

Student progress is evaluated by means of classroom attendance, tests, and a two-hour final exam given at the end of the semester. The grading for this course will be:

- 90-100% = A
- 80-89% = B
- 70-79% = C
- 60-69% = D
- 0-59% = F

SPECIAL NOTES:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact The Director of the Academic Resource Center, in Rm. 3354 or call 288-7670.