SYLLABUS

DATE OF LAST REVIEW: 02/2013

CIP CODE: 24.0101

SEMESTER: DEPARTMENTAL SYLLABUS

COURSE TITLE: Human Biology

COURSE NUMBER: BIOL-0125

CREDIT HOURS: 4

INSTRUCTOR: DEPARTMENTAL SYLLABUS

OFFICE LOCATION: DEPARTMENTAL SYLLABUS

OFFICE HOURS: DEPARTMENTAL SYLLABUS

TELEPHONE: DEPARTMENTAL SYLLABUS

EMAIL: Departmental Syllabus

KCKCC issued email 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: In this course, emphasis is placed upon human anatomical and physiological systems, evolution, genetics and embryology, environmental effects on human growth and development, and recent developments in biological research. In addition to lecture, this course requires completion of one, 2-hour laboratory each week. Human Biology is not open to students who have passed BIOL-0121.

METHOD 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 LECTURE OUTLINE:
I. Introduction to science, scientists and the scientific method.
II. Basic chemistry to help you understand human biology.
III. Human cell structure and function.
IV. Human tissues, organs and homeostasis.
V. Chromosomes and inheritance.
VI. DNA and biotechnology.
VII. Cancer and mitosis
VIII. Genes and medical genetics.
IX. The circulatory system
X. Blood
XI. The lymphatic system and immunity.
XII. The digestive system and nutrition.
XIII. The respiratory system.
XIV. The urinary system and excretion.
XV. The nervous system.
XVI. Our special senses.
XVII. The endocrine system.
XVIII. The skeletal system.
XIX. The muscular system.
XX. The reproductive system.
XXI. Sexually transmitted diseases.
XXII. Human development and aging.

COURSE OUTLINE FOR HUMAN BIOLOGY LABORATORY:
I. Introduction to the microscope
II. The cell
III. Organic compounds
IV. Enzyme function
V. Fermentation
VI. DNA function and extraction
VII. Mitosis and Meiosis
VIII. Basic human genetics
IX. Population genetics
X. Skeletal system
XI. Muscular system
XII. Digestive system
XIII. Circulatory system
XIV. Respiratory system
XV. Urinary system
XVI. Reproductive system

EXPECTED LEARNER OUTCOMES:
A. The learner will be able to become acquainted with the methods of science, especially as they relate to human biology and biological research
B. The learner will be able to appreciate the anatomical and functional complexities of the human body
C. The learner will be able to understand the value of critical thinking both during the course and after it ends

COURSE LECTURE COMPETENCIES:

The learner will be able to become acquainted with the methods of science, especially as they relate to human biology and biological research

The learner will be able to appreciate the anatomical and functional complexities of the human body

1. The learner will be able to list the steps of the scientific method.
2. The learner will be able to describe the nature of molecules, including the variability of their structure and functions within the human body.
3. The learner will be able to describe the structure and function of human cells.
4. The learner will be able to explain the structure and function of human cells.
5. The learner will be able to classify human tissues and organs by structure.
6. The learner will be able to classify human tissues and organs by function.
7. The learner will be able to explain the features of mitosis and assemble a human karyotype.
8. The learner will be able to explain the features of meiosis and assemble a human karyotype.
9. The learner will be able to describe a DNA molecule and the effect of its manipulation on human life.
10. The learner will be able to compare and contrast five characteristics of cancer cells.
11. The learner will be able to describe characteristics, especially disorders, that are inherited as either dominant or recessive genes.
12. The learner will be able to trace the flow of blood from the heart through the body and back again to the heart.
13. The learner will be able to compare and contrast the structure and functions of red and white blood cells.
14. The learner will be able to describe the general structure and function of an antibody and its relationship to B and T cells.
15. The learner will be able to trace the passage of food from the mouth to the anus, describing the structure of the organs through which it passes.
16. The learner will be able to trace the passage of food from the mouth to the anus describing the functions of the organs through which it passes.
17. The learner will be able to describe the pathway of air into and out of the lungs, describing the structure and functions of the structures through which it passes.
18. The learner will be able to explain the movement of a water molecule through a kidney as it is affected by ADH.
19. The learner will be able to describe the various divisions of the nervous system and the functions of each.

The learner will be able to understand the value of critical thinking both during the course and after it ends.

20. The learner will be able to compare the structure of the eye and ear with regard to processing sensory input.
21. The learner will be able to contrast the structure of the eye and ear with regard to processing sensory input.
22. The learner will be able to describe the structure of the major endocrine organs of the body.
23. The learner will be able to describe the function of the major endocrine organs of the body.
24. The learner will be able to identify the structures of the axial and appendicular skeleton.
25. The learner will be able to identify the functions of the axial and appendicular skeleton.
26. The learner will be able to name the major muscles of the body and describe their functions.
27. The learner will be able to describe the path through which both sperm and egg move from their formation until implantation in the uterus.
28. The learner will be able to describe the causative agent and symptoms of an infection by a sexually transmitted virus and bacterium.
29. The learner will be able to describe the effects of aging on humans, from the embryo through senescence.

COURSE COMPETENCIES FOR HUMAN BIOLOGY LABORATORY

The learner will be able to become acquainted with the methods of science, especially as they relate to human biology and biological research.

The learner will be able to appreciate the anatomical and functional complexities of the human body.
1. The learner will be able to list the components and functions of the light microscope.
2. The learner will be able to name the structures and functions of human cells.
3. The learner will be able to know the reagents that stain for organic molecules.
4. The learner will be able to explain the functions of an enzyme.
5. The learner will be able to explain the process of fermentation.
6. The learner will be able to demonstrate the structure of DNA and the procedure for its extraction from animal cells.
7. The learner will be able to summarize the phases of mitosis and meiosis.
8. The learner will be able to demonstrate a knowledge of basic Mendelian genetic principles.
9. The learner will be able to recognize the importance of population genetics as a mechanism of microevolution.
10. The learner will be able to know the components of the skeletal system.
11. The learner will be able to know the components of the muscular system.
12. The learner will be able to know the components of the digestive system.
13. The learner will be able to know the components of the circulatory system.
14. The learner will be able to know the components of the respiratory system.
15. The learner will be able to know the components of the urinary system.
16. The learner will be able to know the components of the reproductive system.

**ASSESSMENT OF LEARNER OUTCOMES:**
Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

**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 room 3354 or call at: 913-288-7670.