COURSE SYLLABUS

LAST REVIEW	Spring 2021
COURSE TITLE	Physiology
COURSE NUMBER	BIOL-0271
DIVISION	Math, Science, Business & Technology
DEPARTMENT	Biology
CIP CODE	24.0101
CREDIT HOURS	3
CONTACT HOURS/WEEK	Class: 3
PREREQUISITES	CHEM-0109, General Chemistry, or CHEM-0111, College Chemistry, or BIOL-0141 Human Anatomy and Laboratory, or BIOL0143 Human Anatomy & Physiology, or BIOL0121, General Biology
COURSE PLACEMENT	None

COURSE DESCRIPTION
Physiology provides an introduction to the dynamic functions of the human organism from the chemical and molecular mechanisms which sustain cellular processes through the control systems responsible for homeostasis and the influence of these systems on the cellular function of organ and system operation.

KANSAS SYSTEMWIDE TRANSFER: BIO2031
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.

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

A. Homeostasis and Cell Activities
    1. Homeostasis
    2. Energy and metabolism
    3. Diffusion and osmosis
    4. Membrane transport
B. The Nervous System
    1. Membrane Potential
    2. Neuron anatomy and physiology
        a. receptors
        b. synapses
        c. potentials
            1. action
            2. graded
    3. Autonomic Nervous System
        a. Parasympathetic division
        b. Sympathetic division
    4. Somatic Nervous System
        a. Muscle anatomy and physiology
        b. Reflex arc.
C. The Cardiovascular System
    1. Circulation
    2. ECG
    3. Mechanical events of the heart cycle
    4. Cardiac output and stroke volume
    5. The vascular system
    6. Regulation of systemic pressure
    7. Capillaries
D. The Respiratory System
    1. Anatomy of the respiratory system
    2. Volumes and capacities
    3. Mechanisms
    4. Gas pressures
    5. Control mechanisms
E. The Urinary System
    1. Anatomy of the urinary system
    2. The nephron
    3. Mechanisms of renal functions
    4. pH regulation
    5. Water balance
    6. Control mechanisms

COURSE LEARNING OUTCOMES

Upon successful completion of this course, the student will:

A. The student will be able to apply homeostasis to specific body functions.

B. The student will be able to compare and contrast methods of material transport across membranes.

C. The student will be able to identify the components of a reflex arc, and describe the generation of electrical potentials in the nervous system.

D. The student will be able to examine the roles of the following in the cardiovascular systems: organization of the cardiovascular system, EKG, cardiac cycle, vasculature, and blood pressure.

E. The student will be able to describe the steps of respiration and the role of the respiratory system in ventilation and gas transport.

F. The student will be able to compare and contrast the two types of nephrons and the three basic processes of the kidneys.

ASSESSMENT OF COURSE LEARNING OUTCOMES
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-of-conduct.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-support-services/index.html.