DATE OF LAST REVIEW: 02/2013

CIP CODE: 24.0101

SEMESTER: DEPARTMENTAL SYLLABUS

COURSE TITLE: Human Anatomy and Physiology

COURSE NUMBER: BIOL-0143

CREDIT HOURS: 5

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.

PREREQUISITES: None

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, http://www.kckccbookstore.com for the required text in this area. See bookstore for current textbook.

COURSE DESCRIPTION: This introductory course examines the structure and function of the organ systems of the body. Particular attention is paid to the role of the organ systems in maintaining homeostasis. Students examine structures by means of small dissections, models, skeletons, charts, and audiovisual materials. Physiological data is measured and collected. This course is not intended to satisfy requirements for anatomy and physiology for some allied health programs, especially pre-nursing and pre-physical therapy assistant.

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, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.
COURSE OUTLINE:

I. Cellular Anatomy and Physiology
   A. Anatomical terminology and hierarchy of structural organization
   B. Basic cellular chemistry
   C. Homeostasis
   D. Cell structure and function
   E. Use of the microscope
   F. Tissue structure and function
   G. Diffusion and osmosis
   H. Cellular bioenergetics

II. Musculoskeletal Anatomy and Physiology
   A. Skeletal tissue
   B. Arthrology
   C. Anatomy of the skeletal system
   D. Muscle physiology
   E. Anatomy of muscles

III. Control Systems
   A. Nervous tissue
   B. Generation of electrical potentials
   C. Receptor physiology
   D. Nervous system potentials
   E. Central Nervous System anatomy
   F. Peripheral Nervous System
   G. Reflexes
   H. Autonomic Nervous System
   I. Vision, hearing, and taste
   J. Endocrine system function

IV. Circulatory systems
   A. Blood structure and function
   B. Anatomy of the heart
   C. Conducting system and the electrocardiogram
      1. Measurement of EKG and exercise
   D. Cardiac cycle
   E. Vascular structure and function
      1. Arteries
      2. Arterioles
      3. Capillaries
      4. Veins
   F. Blood pressure
   G. Immune and lymphatic systems

V. Other organ systems
   A. Anatomy of the respiratory system
   B. Measurement of respiratory volumes
   C. The steps of respiration
   D. Anatomy of the urinary system
   E. Physiology of renal processes
   F. Anatomy of the digestive system
   G. Digestive physiology and metabolism
   H. Male reproductive anatomy and physiology
   I. Female reproductive anatomy and physiology
   J. The integument
EXPECTED LEARNER OUTCOMES:
A. The learner will be able to explain the basic concepts of cellular structure and function.
B. The learner will be able to explain basic cellular chemistry.
C. The learner will be able to describe the structure and function of the body’s muscular and skeletal systems.
D. The learner will be able to explain the structure and function of the body’s control systems.
E. The learner will be able to describe the structure of the body’s circulatory systems, and explain their functions.
F. The learner will be able to describe the functions and structures of the body’s respiratory, urinary, digestive, reproductive, and integumentary systems.

COURSE COMPETENCIES:
A. The learner will be able to explain the basic concepts of cellular structure and function.

1. The learner will be able to define relevant anatomical terminology.
2. The learner will be able to explain the hierarchy of structural organization.
3. The learner will be able to define homeostasis, and explain its role in survival of cells and organisms.
4. The learner will be able to compare and contrast the structure and function of selected cellular structures.
5. The learner will be able to demonstrate proper use of a compound light microscope.
6. The learner will be able to list parts of a microscope and explain their functions.
7. The learner will be able to compare and contrast the structure and basic functions of various types of tissues.

B. The learner will be able to explain basic cellular chemistry.

8. The learner will be able to describe the basic biological chemistry of the cell.
9. The learner will be able to explain diffusion and osmosis as they relate to movement of molecules into and out of cells.
10. The learner will be able to explain the means by which cells use energy and produce energy.

C. The learner will be able to describe the structure and function of the body’s muscular and skeletal systems.

11. The learner will be able to describe the basic properties of skeletal tissue.
12. The learner will be able to explain the structure and function of a generalized synovial joint.
13. The learner will be able to name selected bones and skeletal structures of both the axial and appendicular skeleton.
14. The learner will be able to describe the basic properties and functions of the three types of muscle tissue.
15. The learner will be able to name selected skeletal muscles.

D. The learner will be able to explain the structure and function of the body’s control systems.

16. The learner will be able to describe the basic properties of nervous tissue.
17. The learner will be able to explain how electrical potentials are generated in the nervous system.
18. The learner will be able to describe the anatomy of a generalized receptor, and the generation of a receptor potential.
19. The learner will be able to explain the properties of action and synaptic potentials.
20. The learner will be able to define the basic anatomy of a spinal nerve and list selected peripheral nerves.
21. The learner will be able to explain the anatomy of the four major brain regions and the spinal cord.
22. The learner will be able to describe a reflex pathway and selected spinal reflexes.
23. The learner will be able to explain the general functions of the autonomic nervous system.

E. The learner will be able to describe the structure of the body’s circulatory systems, and explain their functions.

24. The learner will be able to list selected endocrine organs and their general functions.
25. The learner will be able to describe the structure and function of blood.
26. The learner will be able to explain the anatomy of the heart and the pathway of blood through the heart.
27. The learner will be able to list the events of the conducting system of the heart.
28. The learner will be able to describe a normal electrocardiogram and its components.
29. The learner will be able to describe the general events of the cardiac cycle.
30. The learner will be able to define cardiac output and explain various factors which can alter it.
31. The learner will be able to describe the general anatomy of the four major types of blood vessels.
32. The learner will be able to list selected arteries and veins.
33. The learner will be able to explain the role of arterioles in regulating blood flow.
34. The learner will be able to explain the role of capillaries in interstitial fluid balance.
35. The learner will be able to explain how blood pressure is measured and regulated.
36. The learner will be able to define the role of the lymphatic system in fluid balance.
37. The learner will be able to describe the role of the immune system in preventing infections.

F. The learner will be able to describe the functions and structures of the body’s respiratory, urinary, digestive, reproductive, and integumentary systems.

38. The learner will be able to describe the functional anatomy of the respiratory system.
39. The learner will be able to define various clinically important respiratory volumes, including vital capacity.
40. The learner will be able to list the steps of respiration. Explain each step as it relates to the movement of gases in the respiratory system.
41. The learner will be able to describe the functional anatomy of the urinary system.
42. The learner will be able to explain the functions of the three basic renal processes.
43. The learner will be able to describe the functional anatomy of the digestive system, distinguishing between alimentary canal organs and accessory organs.
44. The learner will be able to describe the four basic digestive processes and where these processes occur in the digestive tract.
45. The learner will be able to explain basic metabolic processes as they relate to digestion.
46. The learner will be able to describe the functional anatomy of the male and female reproductive systems.
47. The learner will be able to compare and contrast the reproductive physiology of the male and female.
48. The learner will be able to explain the basic structure and function of the integumentary system.

ASSESSMENT OF LEARNER OUTCOMES: The student may be evaluated by various means. These may include, but are not limited to: written evaluations, oral evaluations, and other written or oral assignments in both lecture and lab.
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 at: 288-7670.