JOHN A. LOGAN COLLEGE **N. Hinckley - FL 09**

BIO 205 **HUMAN ANATOMY AND PHYSIOLOGY I** **4 cr. (3-2)**

COURSE DESCRIPTION:

A study of the structure, functions, and homeostatic mechanisms of the normal human body. Subjects covered include: fundamentals of the chemical basis of life; cell structure and physiology; tissues; integumentary, skeletal, muscular, central and autonomic nervous systems; and special senses. The laboratory includes dissection of a cat, small mammal, mammalian eye, and appropriate physiological experiments.

PREREQUISITES: None

COURSE OBJECTIVES:

Upon completion of the course, the student will be able to:

1. Explain basic chemical concepts addressed in this course.
2. Describe anatomy of cells and function of cell organelles.
3. Identify the types of tissues and explain their functions relative to their structure.
4. Identify components and explain functions of the integumentary, skeletal, muscular and nervous systems and the special senses.
5. List homeostatic mechanisms of the body.
6. Use correct anatomical terms to describe body, directions, regions, and body planes or sections.
7. Describe ways the body performs as a unified whole.

COURSE OUTLINE:

I. BODY AS A WHOLE
   A. Anatomical Terms
   B. Homeostatic Mechanisms
   C. Chemical Basis of Life
   D. Cells
      1. Organelles
      2. Movement through cell membranes
      3. Metabolism
   E. Tissues
      1. Epithelial
      2. Connective
      3. Muscle
      4. Nervous
   F. Integumentary System
      1. Membranes
      2. Skin

II. SUPPORT AND MOVEMENT
   A. Skeletal System
      1. Skeletal tissue
      2. Bones
      3. Articulations
      4. Functions
   B. Skeletal Muscles
      1. Cells
      2. Muscular contraction
      3. Muscular responses
      4. Skeletal muscle function

III. COMMUNICATION, CONTROL AND INTEGRATION
   A. Nervous System
      1. Cells
      2. Impulse conduction
   B. Central Nervous System
   C. Peripheral Nervous System and Reflex Activity
   D. Autonomic Nervous System
   E. Special Senses

COURSE REQUIREMENTS:

Attendance is mandatory. Each unexcused absence from lecture or laboratory will lower the student's numerical grade average one-half point.

Student Success Center. Tutors may be obtained through the Student Success Center. Contact the staff in C219 if this service is desired. John A. Logan College will make reasonable accommodations for students with documented disabilities under Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. Any student with a disability that may have some impact on work in this class, who feels she/he needs an accommodation, should make an appointment with the Coordinator of Services for Students with Disabilities on campus, Jennifer Frost, Room C219B, Ext. 8516. Before services can be provided, this advisor must determine eligibility and arrange appropriate academic adjustments. ***It is the student's responsibility to register in advance of a school term with this office and to turn in a schedule each term to ensure that there is every opportunity for success in this class.***

English Writing Center/Tutoring: For assistance with writing assignments in any college courses, students are encouraged to visit "The Write Place" in E109. English instructors are available for one-on-one tutoring each semester during hours posted at the center.

Financial Aid. Students who receive financial assistance and completely withdraw from classes prior to 60% of the semester being completed (approximately 2-3 weeks after midterm) could be responsible to return a portion of their Federal Pell Grant award. Prior to withdrawing from courses, students should contact the Financial Aid Office.

Course Withdrawal Information. It is expected that you will attend this class regularly. If you stop attending for any reason, you should contact your advisor and withdraw officially to avoid the posting of a failing grade (an E) to your transcript. It is also advisable to discuss the situation with your instructor before dropping.

METHOD OF EVALUATION:

Lecture (Chapter tests)	50%
Laboratory	30%
Final Examination	20%
Total	100%

Grading Scale:

89.5	-	100	=	A
79.5	-	89.4	=	B
69.5	-	79.4	=	C
59.5	-	69.4	=	D
Below		59.4	=	E

Length of course: 16 weeks = 1 semester

Class participation:	48	hours
Laboratory participation:	32	hours
Total	80	hours

The laboratory grade will be based upon two practical examinations, skeleton and muscle diagram tests, and a composite score based on lab reports, quizzes, and dissections. Students are required to complete the review sheets in the back of the lab manual. Some lecture examination and quiz questions may be selected from these exercises.

Six lecture tests will be given and the student's lowest score will not be counted in the lecture average.

No makeup exams will be given. A missed lecture test will count as the student's lowest grade and will serve as the test not counted.

Examination grades will not be curved, however, point adjustment may occur via open note, open book, or impromptu (pop) quizzes and critical thinking activities.

Extra credit may be earned by service learning activities, reading and writing summaries of relevant articles from current periodical literature and use of CD ROM tutorials in the Biology Tutoring Center. Check-in in room C243A. CD ROM titles which may be used are:

1. A.D.A.M. Standard
2. A.D.A.M. Ideal Gross Anatomy Practical
3. A.D.A.M Practice Practical
4. DNA: The Molecule of Life
5. Mitosis
6. Student Companion – Principles of Anatomy and Physiology
7. Human Anatomy and Physiology
8. Interactive Physiology--Muscular System
9. Cat Works
10. Interactive Physiology--Nervous System
11. Physio Ex. Laboratory Experiments in Physiology versions 1.0. 3.0, 4.0 and 5.0

METHOD OF PRESENTATION:

The course will be taught from a systematic approach to the anatomy and physiology of the body and will include:

1. Classroom lecture and discussion
2. Laboratory demonstrations, experiments, and dissection
3. Microscopic examination of prepared slides and materials
4. Anatomical charts
5. Filmstrips, video, slides, transparencies, and overhead projector
6. Videotapes and laser disc
7. Chalkboard
8. Preserved organs
9. Human skeletons
10. Models
11. Various instrumentation
12. Projected slides: Human cadaver dissection

TEXT:

Human Anatomy and Physiology, Elaine Marieb, Benjamin/Cummings, 8th Ed., 2010. ISBN: 978-0-8053-9564-3

Human Anatomy and Physiology Laboratory Manual, Elaine Marieb, Benjamin/Cummings, 9th Ed., 2007. ISBN: 0-321-54245-2 or -8

INSTRUCTOR: Nelda W. Hinckley
Office: C255
Office Hours:
Includes laboratory help sessions. You are most welcome to come in for assistance. If this schedule does not meet your needs, please contact me to set up a time suitable for you.
JALC Ext.: 8323

DATE: Fall, 2009

John A. Logan College Telephone Numbers

Carterville and Williamson County ..... 985-3741 (operator)
985-2828 (direct extension access)
Carbondale and Jackson County ..... 549-7335 (operator)
457-7676 (direct extension access)
Du Quoin 542-8612
West Frankfort 937-3438
Crab Orchard, Gorham, & Trico areas 1-800-851-4720
TTY (hearing-impaired access) 985-2752

John A. Logan College does not discriminate on the basis of race, religion, color, national origin, disability, age, sexual orientation, or gender orientation.

***Laboratory Schedule* (tentative)**

Lab 1: Human torso model
Body organization
Organ systems overview
Rat dissection

Lab 2: Use of microscope
Cell structure
Cell cycle
Human chromosomes

Lab 3: Brownian movement
Diffusion
Dialysis
Osmosis
Filtration
Phagocytosis

Lab 4: Epithelial tissues
Connective tissues
Muscle tissues
Nerve tissues

Lab 5: Structure of cutaneous glands
Hair, nails
Plotting of sweat glands
Body membranes

Lab 6: Bone; gross anatomy, microscopic structure and chemical composition
Axial skeleton: Skull, vertebral column, thorax

Lab 7: Pectoral girdle and upper limbs
Pelvic girdle and lower limbs
Fetal skeleton
Joints: shoulder joint
X-rays

Lab 8: Practical

Lab 9: Skeletal muscle structure
Demonstration: Physiological recording equipment
Muscle groups
Video: Human cadaver muscle dissection
Cat dissection
Human torso and limb models

Lab 10: Cat musculature dissection
Head and neck muscle
Thorax and abdominal wall
Muscle

Lab 11: Cat musculature dissection
Shoulder and back muscles
Fore limb muscles
Hips and hind limb muscles

Lab 12: Nerve tissue
Ganglion slides
Brain models and cranial nerves
Preserved sagittal section of human brain
Dissection, sheep brain
Video - Human cadaver Central nervous system dissection

Lab 13: EEG
Reflexes
Spinal cord models
Spinal nerve dissection, cat
Video - Human cadaver peripheral nervous system dissection

Lab 14: Receptors and somatic senses
Eye models
Ophthalmoscope
Vision tests
Video of eye dissection
Dissection of sheep or cow eye

Lab 15: Ear model and hearing tests
Otoscope
Equilibrium tests
Crista ampullaris slides
Sense of smell and taste
Taste bud slides

Lab 16: Practical

Additional Information

Your instructor welcomes you to Human Anatomy and Physiology and is most interested in your having success in this course.

Students may make up any missed lecture class by attending other lecture sections taught by the instructor. Labs may be made up only if lab space is available and the material to be covered is the same as that missed by the student. Please check with the instructor.

Because of safety and potentially inappropriate material, or disruption, children should not be present in the laboratory or classroom.