COURSE SYLLABUS
Morehead State University
Professional Education Unit
College of Science and Technology
Department of Biology and Chemistry
Human Anatomy and Physiology I - traditional
BIOL 234 Section 001 Fall 2009

COURSE ORGANIZATION: Lecture 9:10-10:10, Monday, Wednesday, Friday 1, Lappin Hall, Room 302

INSTRUCTOR: Dr. Michael Fultz
327F Lappin Hall.
Phone: 783-5440
Email: m.fultz@moreheadstate.edu

OFFICE HOURS: Monday through Friday 10:20am -11:20am, or by appointment

CATALOG DESCRIPTION: BIOL 234. Human Anatomy and Physiology I. (3-0-3); I, II, III. *Prerequisites: Composite ACT score of 18 or above, or BIOL 105 or BIOL 160 or BIOL 171.* A study of human tissues and organ systems (integumentary, nervous, skeletal, and muscular) with a focus on the interrelationships of form and function. Homeostatic regulatory mechanisms will be continually emphasized. NOT ACCEPTABLE as credit for the Biology Area Non-Teaching Option or Environmental Option or Minor in Biology. Required for the Biology Area Teaching Option. *This course satisfies the area studies-natural and mathematical sciences for general education.*

Required Field Experience Hours: [0]

"Community Engagement: A Light to and from the Mountains"

The Professional Education Unit at Morehead State University delivers rigorous, high quality programs that prepare professionals informed by best national and international scholarship, plus research, literature, and experiences specific to Appalachia- preparing professionals to improve the schools, quality of life, and the communities in which they live and serve. This statement is not only the strategic mission for the College, but it also incorporates the conceptual framework that guides all our activities.

Conceptual Framework Outcomes (CFOs):

The Unit and the faculty within individual programs assess the degree to which its graduates:

1) Master the content knowledge, professional and the twenty – first century skills need to make an optimal contribution to "whole" student learning in education settings.

2) Are competent in the collection and use of data to inform decision – making and to demonstrate accountability for student learning.

3) Demonstrate professional dispositions

4) Are culturally competent and understand the regions from which they have come utilizing knowledge and experiences to effectively "bridge the gaps" (economic, achievement, and geographic) ensuring optimal learning for all students.

5) Engage in authentic field experiences in collaboration with committed school – based partners and are empowered to improve the quality of education throughout this region and beyond.

STUDENT LEARNER OUTCOMES (SLOs): Biology 234 is not a memorization course; it is an application course. The Constructivist Philosophy is an accepted theme in that learning is an active process. Although you will develop a large scientific vocabulary, what is required in this course is that you apply what you learn. Each of you must learn to think scientifically and to critically analyze material presented. Each candidate will be expected to develop a positive disposition and come to class well prepared and to develop the personal discipline for academic success. Learner outcomes will be assessed through regular quizzes and exams as well as student responses registered using the i>clicker system. The course content and expectations include, but are not limited to:

1) Learning, understanding and applying biological (anatomical and physiological) principles basic to all body systems. These include:
   A) The organization of biomolecules
   B) The role of enzymes
   C) The homeostatic principles required for the regulation of molecular, cellular, and organ/systems anatomy and physiology
   D) Cellular and organismic transport
2) The development of a vocabulary sufficient for the comprehension of the complex world of this multidisciplinary science comprised of eleven organ systems.
3) The development of a solid foundation upon which subsequent Nursing and Allied Health or Biology courses can depend.
4) An understanding of the thinking processes through which scientists operate.
5) The application of quantitative principles utilized in mathematics and the interpretation of graphed data in order to understand the physiological principles.

NCATE/ EPSB Accreditation Alignment of CFOs and SLOs:

Program: Biology - teaching	**Human Anatomy and Physiology 1 BIOL 234**				
Aligned with→ **Assessment↓** **(point values)**	**Kentucky Teacher Standards (KYTS)**	**Kentucky Department of Education Core Content for Assessment (KDECCA)**	**Education Professional Standards Board (EPSB)**	**National Science Teachers Association (NSTA)**	**NCATE**
Lecture exams (450) CFO:1, 2 SLO: 1, 2, 3, 4, 5	1,	3, 4	Literacy	1, 2	1
Lecture quizzes (125) CFO: 1, 2 SLO: 1, 2, 3, 4, 5	1	3, 4	Literacy	1,2	1
i>clicker participation (25) CFO: 1, 2 SLO: 2, 3, 4, 5	1	3,4	Literacy	1,2	1

Assignment Descriptions:

Program: BIOLOGY – SECONDARY TEACHING Human Anatomy and

Physiology 1 (BIOL 234)	
Assessment (point value)	**Description**
Lecture and Lab exams (450)	Exams will assess content knowledge and conceptual understanding of the course material from lecture. Exams will be taken during scheduled laboratory time.
Lecture quizzes (125)	Lecture quizzes will assess content knowledge and conceptual understanding of the course material from lecture. Quizzes will be taken during scheduled class time.
i>clicker participation(25)	This exercise will allow the instructor and student to assess content knowledge and conceptual understanding before quizzes/exams. I>clicker participation will be performed during scheduled class time.

GRADING POLICY: Grades will be assigned on a % basis of 600 points.

Exam I	**100pts**
Exam II	**100pts**
Exam III	**100pts**
Exam IV	**100pts**
Exam IV Comprehensive	**50pts**
Quizzes	**125pts**
i>clicker participation	**25pts**
	600pts

GRADING SCALE:
A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
E ≤ 59%

REQUIRED TEXT: Principles of Anatomy and Physiology (Twelfth Edition) by Tortora and Derrickson, Wiley Higher Education. 2009. ISBN**:** 9780470281000

SUPPLIMENTAL MATERIAL (optional): A Photographic Atlas of the Human Body (Second Edition) by Tortora. Wiley Higher Education. 2004. ISBN 0-471-42064-6

WileyPLUS WEBSITE: http://edugen.wiley.com/edugen/class/cls124596

i>clicker: You are required to purchase an i>clicker remote for in-class participation. i>Clicker is a response system that allows you to respond to questions I pose during class, and you will be graded on that feedback and/or participation. In order to receive this credit, you will need to register your i>clicker remote online within the first 3 days of class. You must have come to class at least once and voted on at least one question, in order to complete this registration properly. Once you have voted on a question in my class, go to www.iclicker.com/registration. Complete the fields with your first name, last name, student ID, and remote ID. Your student ID should be your MSU ID, for example, m0135624. The remote ID is the series of numbers and sometimes letters found on the bottom of the back of your i>clicker remote. The i>clicker response system will be used every day in class, and you are responsible for bringing your remote daily.

ATTENDANCE POLICY: There is a strong correlation between class attendance and success in Biology Courses; therefore, attendance to all lectures is critical and you are expected to attend. A student with a valid, documented excuse (such as for illness/injury, death in the family, or university-sponsored activity) should promptly notify his/her instructor in order to make up the material (exam) missed. Students are expected to prepare themselves for each lecture session by reading any related material prior to attending the lectures. Please do not be late because it puts you at a disadvantage and can easily disrupt the instructor and your peers.

IMPORTANT DATES:		
	September 7	Labor Day (no class)
	October 8, 9	Fall Break (no class)
	October 12	Mid-term grades due
	October 30	Last day to drop with grade of "W"

November 9-13 Advance registration for Spring
December 11 Final Exam 8:00am-10:00am

COURSE PHILOSOPHY: Simply stated, anatomy and physiology are the study of human form and function. However, even the most tantalizing subject matter can be drudgery to study and difficult to comprehend if not effectively presented. Therefore, you will be presented the information in a logical, understandable format that is unencumbered by unnecessary details and emphasizes how each concept is an integral part of the whole subject matter. Too often, students view isolated sections of anatomy and physiology courses as separate entities; by understanding how each component of the body depends on other components; a student can appreciate the integrated functioning of the human body. We will focus on the mechanisms of body function and the course is organized around the central theme of homeostasis (how the body meets changing demands while maintaining the integral constancy necessary for all cells and organs to function). To keep pace with today's rapid advances in the health sciences, students in the health professions must be able to draw on their conceptual understanding of anatomy and physiology. Therefore, this course is designed to promote understanding of the basic principles and concepts of anatomy and physiology rather than memorization of details. In order to help the student ascertain that he or she is assimilating the material, quizzes and exams utilizing the principles and theories of human anatomy and physiology will be given periodically throughout the semester.

AMERICANS WITH DISABILITIES ACT (ADA): In compliance with the ADA, all students with a documented disability are entitled to reasonable accommodations and services to support their academic success and safety. Though a request for services may be made at any time, services are best applied when they are requested at or before the start of the semester. To receive accommodations and services the student should immediately contact the Disability Services Coordinator at: 204-E ADUC, 606-783-5188, or e.day@moreheadstate.edu.

CAMPUS SAFETY STATEMENT: Emergency response information will be discussed in class. Students should familiarize themselves with the nearest exit routes in the event evacuation becomes necessary. You should notify your instructor at the beginning of the semester if you have special needs or will require assistance during an emergency evacuation. Students should familiarize themselves with emergency response protocols at www.moreheadstate.edu/emergency

USE OF TECHNOLOGY: Students will be expected to use the internet, e-mail, word processing, and any other appropriate software needed to complete assignments.

EXAMINATIONS: A student with a valid excuse (verification required) for missing an exam should notify Dr. Fultz beforehand if possible or within 24 hours of the missed exam in order to schedule a make-up examination within one week following return to class. If your absence is going to be an extended one, it is recommended that the Dean of Students, Kevin Koett (783-2014) be contacted. An exam missed without an acceptable excuse will be recorded as a Zero. All exams will be available for review for two weeks after the exam grades are returned. Students may review exams in the instructor's office. The Final Exam (Exam V) will contain an additional 50 point comprehensive section.

QUIZZES: A number of quizzes worth varying point values will be given and **cannot** be made up; they can however be taken in advance of your absence if your excuse for missing class is designated acceptable by the institution and more importantly if I have it prepared. Every quiz given will be counted until your total quiz score reaches a maximum of 125 points. Quizzes will be given at the start of class so being on time is critical. Quizzes will be either visual, matching, multiple choice, fill in the blank, short answer, or some combination thereof. Remember quizzes will be given at the start of class so being on time is critical.

TUTOR SESSION: Regular review sessions will be scheduled throughout the semester. These will be announced in lecture. Additional tutoring may be received by making an appointment or through the Learning Lab in 208 Allie Young Hall (783-5200).

CLASSROOM BEHAVIOR:

Academic Dishonesty: Plagiarism or cheating in any form will not be tolerated and will be dealt with in accordance Appendix A of the student handbook and the University Undergraduate Catalog. Academic dishonesty, as defined by the University, occurs when you do not do your own work, fail to give credit for the work of others, or use resources inappropriately. (www.moreheadstate.edu/dsl/eaglehandbook).

Consistent Tardiness is not acceptable. You are expected to be in your seat and ready for class.
Cell Phones (including Blackberry's and I phones), Walkie Talkie's, PDA's, and Beepers must be shut off upon entering the classroom. MP3 Players, iPOD's or any other device requiring the use of headphones are not permitted during class.

Laptops and Tape recorders are welcome but must be kept at your desk. It is a safety issue to have power cords running across the floor (It is your responsibility to have a fully charged battery). If I discover that you are doing anything other than course related material on your laptop during class I will collect your computer and you can pick it up immediately following class, following your second offense you will lose your privilege to bring your laptop back to class.
Any disruptions to lecture will not be tolerated, and the student will be asked to leave.

Tentative Lecture Syllabus
Human Anatomy and Physiology I
Dates are subject to change. Changes will be announced in lecture.
Learner outcomes are indicated in ().

Homeostasis (1 Lecture) (SLOs 1, 1C, 2, 3, 4)	
Introduction to Anatomy and Physiology	Chapter 1
Homeostasis, Levels of Organization	
Chemistry (2 Lectures) (SLOs 1,1A, 2, 3)	
Inorganic Chemistry	Chapter2
Atoms, Ions, Molecules, pH	
Organic Chemistry	Chapter 2
Lipids, Carbohydrates, Proteins, Nucleic Acids	
Enzymology (1 Lecture) (SLOs 1, 1B)	
Enzymology	Chapter 2
The Cell (3 Lectures) (SLOs 1, 1D, 2, 3, 4)	
The Cell	Chapter 3
Cytosol, Nucleus & Organelles	
Plasma Membrane & Membrane Transport	Chapter 3
Structure, Design & Diffusion	
Plasma Membrane & Membrane Transport	Chapter 3
Osmosis, Active Transport & Vesicular Transport	
Cell Reproduction (2 Lectures) (SLOs 1, 2, 3, 5)	
Cell Division	Chapter 3
Mitosis	
Cell Division	Chapter 3
Meiosis	

EXAM I

Primary Tissues (3 Lectures) (SLOs 1, 2, 3)	
Primary Tissues: Epithelial	Chapter 4
Cell Junctions & Basement Membrane	
Primary Tissues: Muscle & Nervous	Chapter 4
Primary Tissues: Connective	Chapter 4
Extracellular Matrix & Membranes	
Terminology & The Body's Design (1Lecture) (SLOs 1, 2, 3)	
Anatomical Terminology & Survey of Organ Systems	Chapter 1

Position, Planes, Directional Terms, Body Cavities

The Integument System (1 Lecture) (SLOs 1, 2, 3)	Chapter 5
The Integument	
Skin, Accessory Structures	
The Skeletal System (4 Lectures) (SLOs 1, 2, 3, 5)	
Osteology	Chapter 6
Histology & Bone Remodeling	
Axial Skeleton	Chapter 7
Cranial Bones, Facial Bones, Vertebral Column & Thorax	
Appendicular Skeleton	Chapter 8
Pectoral Girdle and Forelimbs & Pelvic Girdle and Hindlimbs	
Joints	Chapter 9
Classification, Kinesiology	

EXAM II

The Nervous System (9 Lectures) (SLOs 1, 2, 3, 4, 5)	
Nervous Tissue	Chapter 12
The Neuron, Neuroglia, CNS & PNS	
Membrane Potential & Electrical Activity	Chapter 12
Resting Membrane Potential & Action Potentials	
Membrane Potential & Electrical Activity	Chapter 12
Action Potentials	
Synapase and Neurotransmitters	Chapter 12
Electrical Synapse, Chemical Synapse & Neurotransmitters	
Neural Integration	Chapter 12
EPSP, IPSP, Summation & Neural Circuits	
Central Nervous System I	Chapter 13
The Spinal Cord & Spinal Nerves	
Central Nervous System II	Chapter 14
Lobes, CSF, Blood-Brain Barrier & Meninges	
Central Nervous System III	Chapter 14
Functional Arrangement of the Cerebrum & Cranial Nerves	
Autonomic Nervous System	Chapter 15
Sympathetic Division, Parasympathetic Division	

EXAM III

The Muscular System (7 Lectures) (SLOs 1, 2, 3, 4, 5,)	
Motor Unit, Twitch, Recruitment & Neuromuscular Junction	Chapter 10
Mechanism of Muscle Contraction	Chapter 10
Muscle Proteins, Sliding Filament Theory	
Mechanism of Muscle Contraction	Chapter 10
Excitation-Contraction Coupling	
Metabolism & Fiber Types	Chapter 10
ATP Production, Muscle Fatigue & Fiber Types	
Smooth & Cardiac Muscle	Chapter 10
Muscle Identification	Chapter 11
Muscle Identification	Chapter 11

EXAM IV (Final Exam) Friday, December 11, 8:00am-10:00am

The Final will be comprised of the fourth content section (worth 100pts) and a comprehensive portion (worth 50pts). The comprehensive portion will consist of questions covering the three previous content exams.