

Urbana University
High School Dual Enrollment Program

College of Arts and Science, Department of Mathematics and Science
BIO 251 Anatomy and Physiology, 4 credit hours, 2012-13
Course Syllabus

Instructor: Surena D. Neer, MS

Location: West Liberty – Salem High School, room 59; Periods 4,7

Office: Room 59 West Liberty- Salem High School; hours- 1st period, homeroom and after school

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Prerequisites: Dual Enrollment requirements and Introductory course in biology or permission of instructor

Textbook:

Hole, John; Human Anatomy and Physiology.

Lab manual to accompany text, 12th ed. W.C. Brown Publishers.

Supplemental Materials:

Introduction to the Human Body: the essentials of anatomy and physiology.

Gerald Tortora and Bryan Derrickson, Wiley publishing.

Lab book: Essentials of Anatomy and Physiology Laboratory manual.

Course Description: This course serves as an introduction to the structure and working of the human body with emphasis on how structure makes function possible and disruptions in either leads to disease. Special emphasis will be placed on the cell, tissue, integumentary, musculoskeletal, nervous, and cardiovascular system. The health risks associated with current behavioral and societal issues will be discussed, including, drug and alcohol use, smoking, HIV, eating disorders, obesity, heart disease, etc.

Dual Enrollment Program Outcomes:

Through the Dual Enrollment Program students build skills to:

1. This course is designed to assist students as they prepare themselves to further their education in the area of science that relate to the human body.
2. Students will acquire and practice skills for reading, writing, speaking, listening, abstract inquiry, critical thinking, logical reasoning and using computers and related technology.
3. Students will develop an appreciation for and means of analyzing science disease / disorders related to the human body.
4. Students will analyze and reflect upon the challenges facing our global society as well as the importance of being a life-long learner and responsible citizen.

Instructional Objectives:

By the end of this course, the student will be expected to have achieved the following objectives:

1. Identify and describe the basic anatomy of the human body
2. Describe and explain the basic physiology of the human body
3. Demonstrate understanding of how different organizational levels of the human body inter-relate
4. Demonstrate understanding of disease or injury in context of anatomy and physiology of the human body.

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Knowledge:

The student will be able to demonstrate knowledge of:

1. Demonstrate the ability to recall prefixes, suffixes and roots related to the human body.
2. Demonstrate the ability to recall the structure and function of the cell and its structures.
3. Identify specific tissue types.
4. Identify specific structures (anatomy) and functions (physiology) of the various systems
5. Diseases and disorders of the various systems.
6. Utilize the microscope

Skills:

The student will be able to demonstrate skill in:

1. Laboratory work, including dissection of preserved organs.
2. Identify organs
3. Interpret finding and communicate results based on experimental evidence.
4. Use technology to gather, process information and for problem solving.
5. Understand the interconnectedness of anatomy and physiology.

Dispositions:

The student will be able to demonstrate:

1. An appreciation for the intricate nature of the human body.
2. A greater awareness and understanding of the human body.
3. A greater awareness of the disease / disorder mechanism and treatments thereof.
4. Become aware of career potential in the field of science.

Alternative/Special Needs Accommodations:

(What you'll be doing to accommodate student with alternative or special needs)

Students are responsible for informing the University of any Instructional Accommodations or special learning need that they may have at the beginning of term. Free tutoring services are available for **all** UU students at any time by contacting the Center for Student Success at 937-484-1418. If you have a documented disability (see the Urbana University catalog under the Disability Services section for qualifications) please contact the office of **Disability Services** at 037 – 484 – 1286 or 937-484-1340 located in North Hall for assistance, paperwork and accommodation. Self – Disclosure forms are also available, upon request, in the student Services Office or by calling 937-484-1378.

Assessment:

(What types of assessments will be used with your students)

Summative assessment (tests, quizzes, graded chapter questions): ~65%

Labs (projects, papers, and management): ~25%

Formative assessment (vocabulary [med. Term.], practice questions, Bell work): ~10%

Additional Competencies:

Laboratory: All students must pass a safety test before any lab work can be done. Adherence to lab safety rules is a part of your laboratory grade. Misbehavior will not be tolerated and will result in removal from the lab and an “F” for that lab. If you believe that you may be pregnant, please consult with your physician before exposure to chemicals.

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Detailed Explanation – Student Assignments:

Class Assignments (in/or out of class)

Each chapter will include the following:

- Vocabulary (medical terminology prefixes, suffixes, and roots) – 10 pts
- Practice questions within chapter – 10 pts.
- Labs (1-6) – 20 pts
- Quizzes (1-3) – 20 pts
- End of chapter questions – 30 pts
- Project – 10 pts
- Test – 100 pts

Each nine weeks will include the following:

- Disease / disorder topic– 50 pts
- Lab management – 50 pts
- Bell work – 50 pts
- Lab practical – 50 pts

Each semester will include the following:

- Comprehensive Exam – 200 pts

Statement – Student Evaluation Criteria:

- A 92 -100
- B 83 -91
- C 74 -80
- D 65 -73
- F 64 or below

Course Outline:

(Topics/Timing/Disclaimer)

Note: This is a tentative schedule and subject to change as the need arises. Additional assignments may be given based on class progress. Students requiring accommodations for taking notes or tests should make arrangements to discuss their needs with the instructor after the 1st or 2nd class. Students are responsible for reading this syllabus, following instructions, and asking questions for which he or she needs additional information or clarification.

1st 9 weeks

Introduction to the human body

- Labs: Body organization and terminology, Care and use of microscope
- Quizzes: body regions, microscope
- Project: body concept map

Chemical basis of life

- Labs: Chemistry of life
- Quizzes: inorganic substances, organic substances
- Project: Molecule poster

Cells

- Labs: cell structure and function, cell cycle
- Quiz: Cell structure
- Project: 3D cell model

Cellular metabolism

- Labs: Movement through membrane, action of an enzyme
- Quizzes: Cellular respiration, Protein synthesis
- Project: Metabolic reaction and pathway poster

Disease / disorder topic - Integumentary

Lab practical

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2nd 9 weeks

Tissue

Labs: Epithelial tissue, Connective tissue, Muscle and Nervous tissue
Quizzes: Epithelial tissue, connective, muscle and nervous tissue
Project: Epithelial tissue models

Integumentary

Lab: skin
Quiz: skin section
Project: build skin model

Skeletal

Labs: Bones structure / class, organization of skeleton, Skull, Vertebral column and thoracic cage, Pectoral girdle and upper appendicular, Pelvic girdle and lower limb
Quizzes: skull / facial, axial skeleton, appendicular skeleton
Project: fracture pamphlet

Joints

Labs: Joints
Quiz: joint types
Project- Joint comparison (physical examples) poster

Disease / disorder topic – Musculoskeletal

Lab practical
Exam – 1st semester

3rd 9 weeks

Finish joints if necessary

Muscles

Labs: Skeletal muscle structure, muscles of face- head- neck, muscles of the chest – shoulder- and upper limb, muscles of the deep back – abdominal wall, Muscles of the hip and lower limb
Quizzes: face and neck muscles, arm and chest muscles, back-stomach and lower limb
Project: Movement analysis

Nervous

Labs: Nervous tissue, Spinal cord- meninges, reflex arc – reflexes, brain and cranial nerves, dissection of sheep brain, Nerve impulse stimulation
Quizzes: Brain, Nerve tissue, Nerve impulse conduction
Project: Nerve model, neurotransmitter pamphlet

Disease / disorder topic - Nervous

Lab practical

4th 9 weeks

Senses

Lab: Ear and hearing, eye structures, endocrine histology and diabetic physiology
Quizzes: ear structure and hearing, eye structure and sight
Project: receptor power point

Cardiovascular

Lab: blood cells and blood typing, heart structures, pulse rate and blood pressure, online: blood testing, factors affecting cardiac cycle
Quizzes: Pathway of blood in body / heart, Blood coagulation and clotting factors, cardiac cycle and conduction
Project: Lymph component power point

Cat Dissection

Labs: Musculature, cardiovascular system, digestive system, respiratory system, urinary system, reproductive system

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Test: digestive, respiratory, urinary, reproductive

Disease / disorder topic – Cardiovascular

Lab Practical

Comprehensive exam (no exemptions) – 2nd semester

Behavior Expectations:

Mature, respectful, adult behavior is expected in the classroom, university offices, and field placements at all times.

Examples of unacceptable behavior would include outburst in class, talking during class, disrespectful remarks or actions to fellow students, faculty, or staff; or any other behaviors deemed inappropriate for the intended situation. Should this occur, incident reports will be filed. Campus security may be called if deemed necessary.

Class Attendance:

It is expected that you will attend all classes. Classes include learning activities which are not easy to replicate by reading or borrowing notes from another student. The professor will lower your grade **after three (3) excused/unexcused absences. 3 tardies will be the equivalent of 1 absence.**

Class Participation:

It is expected that you will **participate actively** in all class sessions in a manner that shows **prior preparation** through readings and other assignments. A failure to participate will affect your final grade.

Class Assignments, Projects, Tests/Exams:

1. It is expected that all assignments and tests/examinations will be completed as scheduled unless there are clearly extenuating circumstances.
2. All assignments, unless specifically excluded, are to be typed or completed using a word processor.
3. All assignments are to be appropriately documented as to use of quoted or paraphrased materials. MLA style of writing must be used..

Academic Integrity:

Candidates are expected to turn in original work. Plagiarism, in any form, will result in an “F” in this course. Please read “Academic Misconduct” in the Urbana University catalog.

Use of College Level Writing & Speaking Skills:

Candidates are expected to use college level writing skills in all typed and hand written assignments. Candidates are expected to use Standard English when speaking.

Educational Support Services for Students:

(Specific to School)

Electronic Devices [cell phones, pagers, iPods, MP3 players, palm pilots, headphones, gaming, & etc.] :

*No Electronic Devices allowed in class.

* Laptops are permitted for note taking only (prearranged with WLS).