

Anatomy and Physiology Syllabus, 2009-2010

Instructor: Marilyn Stewart

Email: @ndstion.edu

School phone: 816-942-3282

Text: Marieb, Elaine N.: *Essentials of Human Anatomy and Physiology*, 9th Ed., San Francisco, CA, Pearson Education, Inc., 2009; Marieb, Elaine N.: *Anatomy and Physiology Coloring Workbook*, 9th Ed., San Francisco, CA, Pearson Education, Inc., 2009.

Course Description: Anatomy and Physiology covers the structure and function of the human body. Studies will be made on several levels: cells (cytology), tissues (histology), organs and organ systems. The class will be conducted as a series of lectures, class discussions, case studies, small group work, and lab activities.

Course Objectives: Students will acquire the following skills and general knowledge:

- Understand how the human body is organized
- Examine the composition and reproduction of cells
- Explore how materials move through the various membranes and the effects on metabolism
- Compare and contrast the four major tissue groups and their relationship to the various organ systems
- Recognize and use medical terminology, prefixes, suffixes, and root words
- Investigate the anatomy and physiology of the body's 11 organ systems
 - Support and movement: skeletal, muscular, and integumentary systems
 - Integration and coordination: nervous and endocrine systems
 - Transportation: cardiovascular, lymphatic systems
 - Absorption and excretion: digestive, respiratory, urinary systems
 - Life cycle: reproductive system

Instructional Activities: Instructional activities will include lecture, note-taking, class discussions, small group work, case studies, and lab activities

Course Content:

1st Semester

Chapter 1: An Overview of Anatomy and Physiology

Relationship between anatomy and physiology, levels of organization, homeostasis, anatomical and regional terms, body cavities

Chapter 2: Basic Chemistry

Relationship between matter and atoms, chemical bonds, ions, molecules, organic and inorganic compounds, chemical reactions, acids and bases, structure and function of DNA and RNA, role of enzymes and ATP

Chapter 3: Cells and Tissues

Typical cell, movement across cell membrane, cell division and differentiation, structure and function of four types of tissue process of tissue repair

Chapter 4: Skin and Body Membranes

Structure and function of types of membranes, structure and function of skin and accessory organs of integumentary system, determinants of skin color, burns, skin cancer

Chapter 5: The Skeletal System

Axial vs. appendicular skeleton, functions of skeletal system, classifications of bones, bone formation, classification of joints, function of spinal curves, abnormal spinal curves

Chapter 6: The Muscular System

Structure and function of types of muscle tissue, microscopic structure of skeletal muscle, role of actin and myosin, events of a muscle cell contraction, regeneration of ATP, name/location/action of major muscles, identification of different types of body movements

Chapter 7: The Nervous System

Organization, structure, and function of nervous system, components of CNS and PNS, function of neurons and supporting cells, events leading to generation of nerve impulse, regions of brain, function of cranial nerves, major nerve plexuses, effects of PNS and SNS on various organs

Chapter 8: Special Senses

Structure of eye, visual pathway to optic cortex, eye reflexes, structure and function of external/middle/internal ear, mechanisms of equilibrium and hearing, structure and function of olfactory and taste receptors

2nd Semester

Chapter 9: The Endocrine System

Chemistry of hormones, mechanisms of hormone action, major endocrine organs

Chapter 10: Blood

Composition and functions of blood, hematopoiesis, hemostasis, blood groups and transfusions

Chapter 11: The Cardiovascular System

Anatomy and physiology of heart, microscopic and gross anatomy of blood vessels, physiology of circulation

Chapter 12: The Lymphatic System and Body Defenses

Structure and function of lymphatic vessels and lymph nodes, innate and adaptive body defenses, organ transplants, disorders of immunity

Chapter 13: The Respiratory System

Anatomy of respiratory system, mechanics of breathing, respiratory volumes and capacities, gas transport in the blood, control of respiration respiratory disorders

Chapter 14: The Digestive System and Body Metabolism

Anatomy of digestive system, accessory digestive organs, food breakdown and propulsion in esophagus, stomach, small and large intestines, nutrition, carbohydrate/ lipid/protein metabolism in body cells, role of liver

Chapter 15: The Urinary System

Anatomy of kidneys, nephrons and urine formation, anatomy of ureters/urinary bladder/urethra, micturition, maintaining water and electrolyte balance of blood, maintaining acid base balance of blood

Chapter 16: The Reproductive System

Anatomy of male and female reproductive system, function of male and female reproductive organs, female reproductive cycles, mammary glands, pregnancy and embryonic development, childbirth

Policies and Procedures

Homework: Homework will entail primarily reading the assigned material. Assignments will also be made from the Coloring Book – **although I will not usually collect these assignments, it is recommended that you do this work as several questions on the chapter test will be taken from this material.** There will be in-class assignments that will be due during class. Assignments are designed to help you understand current concepts and facilitate comprehension of future concepts. Assignments may include individual or small group presentations. The human body is very complex – **some memorization is required for this class.** Assignments will be posted in the classroom as well as on my web page. An assignment is considered late if not handed in when requested. You are responsible for the work you miss and for knowing about upcoming tests and your current grade.

Assessments: Your grade will be based on total points which will come **primarily from test scores.** Tests will be in the form of quizzes (including pop quizzes), chapter tests, lab practicals, and the final exam. Test format may include multiple choice, true/false, short answer, and/or essay questions. The date for a chapter test will be announced several days in advance. **Since a substantial amount of material is covered in every chapter, it is wise to review your notes each evening and to give yourself several days to study for a chapter test.** There is no extra credit in this class. I retain all tests.

School guidelines regarding make-up work will be followed: you have twice the number of days absent to make up work. **If you are out the day before a previously announced test, you must take the test with the class when you return on test day. If you are absent the day of the test, you will take a different form of the test the day you return.** If you are to be absent from class on test day because of a school function, you must arrange to take the test prior to leaving on the school activity or you will take a different form of the test. If you are in school the day of a test or when work is due, even if you checked in late or left early, you are responsible for the work (unless you are leaving due to illness).

Grading: Your grade in this class is based on total points using the following breakdown:

A	95-100%	A-	93-94%		
B+	91-92%	B	87-90%	B-	85-86%
C+	83-84%	C	76-82%	C-	74-75%
D+	72-73%	D	67-71%	D-	65-66%
F	below 65%				

The two quarter grades will be averaged together and will represent 80% of the semester grade. The semester final will count as 20% of the semester grade.

Academic Integrity: All school rules will be followed [no food or drink in the classroom (bottled water is permitted), punctuality, proper uniform, etc.]. Pink slips will be given for lack of compliance. Cheating on a quiz or test, copying someone's work, or plagiarizing material for a presentation will result in a zero on that assignment and the incident will be reported to the Academic Dean and the Dean of Students.

School policy will be followed regarding cell phones and other electronic devices. Students should refrain from talking during instruction and, when working in small groups, any discussion should pertain to the task. Talking (or creating any other disturbance) while a test is being administered will result in a 20% deduction in your test score. Students should bring their text, workbook, and notes to class each day. Students should have only their Anatomy and Physiology materials on their desk during class. **Any non-Anatomy and Physiology materials brought to class must be stored under the student's desk so that the aisles remain clear.**