

Intro to Human Anatomy & Physiology
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Instructor:

Ms. Kendra Radnich
B.S. Kinesiology, Arizona State University
Masters in Secondary Education, Arizona State University- West

Office Hours:

Office hours will be posted on the board weekly.

Official Course Description:

Principles of scientific method. Structural organization, homeostasis and control mechanisms of the body. Specific chemistry concepts. Structure and function of the major systems of the body.

Prerequisites: None.

Official Course Competencies:

- Describe principles of scientific method. (I)
- Describe the structural organization of the body. (II)
- Describe homeostasis and homeostatic control mechanisms. (III to XV)
- Describe specific chemistry concepts of the body. (IV to XV)
- Describe the structure and function of the integumentary system and body membranes. (V)
- Describe the structure and function of the skeletal system and joints. (VI)
- Describe the structure and function of the muscular system. (VII)
- Describe the structure and function of the nervous system. (V to XV)
- Describe the structure and function of the endocrine system. (V to XV)
- Describe the structure and function of the cardiovascular system. (X)
- Describe the structure and function of the lymphatic system and immunity. (XI)
- Describe the structure and function of the respiratory system. (XII)
- Describe the structure and function of the digestive system. (XIII)
- Describe the structure and function of the urinary system. (XIV)
- Describe the structure and function of the reproductive system. (XV)

Required Course Materials:

Title	Edition	Author	ISBN
Anatomy & Physiology	9th Edition	Elaine Marieb	9780136001652

Course Outline (Covers Fall and Spring Semester)
MCCCD Official Course Outline:

BIO160 19996-99999

Introduction to Human Anatomy and Physiology

- I. Scientific Method
 - A. Process of scientific inquiry
 - B. Experimentation and analysis
 - 1. gross
 - 2. microscopic
- II. Structural Organization
 - A. Anatomical position and directional terms
 - B. Body planes and quadrants
 - C. Body cavities
 - D. Regional terms
 - E. Structural units
 - 1. cells
 - a. structures
 - b. membrane permeability and transport
 - 2. tissues a. epithelial b. connective c. muscle d. nervous
 - 3. organs
 - 4. systems
- III. Homeostasis
 - A. Components
 - B. Feedback mechanisms
- IV. Basic Chemistry of the Body
 - A. Atomic structure and ions
 - B. pH, acid, base, buffer
 - C. Organic molecules
- V. Integumentary System and Body Membranes
 - A. Integument (skin and derivatives)
 - 1. structure
 - 2. function
 - B. Membranes
 - 1. classification
 - 2. location
 - C. Wound healing
- VI. Skeletal System and Joints
 - A. Bone Structure
 - 1. types
 - 2. classification
 - 3. bony features
 - B. Bone Function
 - C. Bone formation, growth and remodeling
 - D. Joints
 - 1. fibrous
 - 2. cartilaginous
 - 3. synovial
- VII. Muscular System
 - A. Skeletal muscle
 - 1. structure
 - 2. general functions
 - 3. major groups and related actions
 - 4. general mechanism of contraction
 - B. Cardiac muscle
 - 1. structure
 - 2. function
 - C. Smooth muscle
 - 1. structure
 - 2. function

VIII. Nervous System

A. Structural and Functional Overview

1. organization
2. cell types
 - a. neuron
 - b. neuroglia
3. nerve impulse

B. Central nervous system

1. structures
 - a. brain
 - b. spinal cord
 - c. ventricles
2. functions
3. protection
 - a. cerebrospinal fluid
 - b. meninges

C. Peripheral Nervous System

1. divisions
 - a. somatic
 - b. autonomic
2. nerves
 - a. cranial nerves
 - b. spinal nerves
 - c. major peripheral nerves
3. functions

D. Special senses

1. eye
2. ear

IX. Endocrine System

A. General functions

B. Major glands

C. Hormones

1. target
2. actions

X. Cardiovascular System

A. Blood

1. composition
 - a. fluids
 - b. cells
2. functions
 - a. transport
 - b. hemostasis overview
3. blood groups

B. Heart

1. structures
 - a. chambers
 - b. valves
 - c. great vessels of the heart
 - d. coronary vessels
 - e. pericardium
2. blood flow pathway
 - a. route
 - b. systole and diastole
3. conduction pathway
 - a. route
 - b. normal EKG

C. Blood vessels

1. types
2. major arteries
3. major veins
4. circulatory routes
5. blood pressure

XI. Lymphatic System and Immunity

A. Lymphatic system

1. major organs
2. vessels
 - a. lymph
 - b. drainage
3. general functions

B. Immunity

1. nonspecific
2. specific
 - a. antibodies
 - b. cells

XII. Respiratory System

A. Structures

1. air pathways
2. gas exchange
3. pleural membranes

B. Functions

1. general mechanism of ventilation
2. general mechanism of respiration
3. role in acid-base balance

XIII. Digestive System

A. Structures

1. gastrointestinal tract
2. accessory organs
3. peritoneum

B. General functions

1. digestion
2. absorption
3. elimination pathway and process

XIV. Urinary System

A. Structures

1. gross anatomy
 - a. organs
 - b. gender differences
2. nephron

B. Functions

1. urine formation overview
2. elimination pathway and process
3. role in acid-base balance

XV. Reproductive System

A. Male

1. structures
 - a. testes
 - b. accessory glands
 - c. ducts
 - d. sperm pathway
2. functions
 - a. sperm formation
 - b. semen production
 - c. hormonal regulation

B. Female

1. structures
 - a. ovaries
 - b. accessory structures
 - c. ovum pathway
2. functions
 - a. ovum formation
 - b. hormonal regulation
 1. menstrual cycle
 2. pregnancy
 3. menopause

Standards And Expectations:

This course is a college level course and is intended for high school students at the junior and senior level. This will be a challenging course. Expect to put in a lot of time and effort into learning the information presented in class and also allow ample study time outside of the classroom.

Classroom Expectations: In addition to strictly following all DVHS handbook rules, I expect the following to occur in my classroom:

Be There – It is important that you are in class regularly and on time. Not only should you physically be in class but also mentally. By using MP3 players or cell phones you are not mentally in class. Make sure these items are not in use or they will be confiscated in accordance with the DVHS student handbook..

Play – The best environment for learning is a fun one. We will have fun in class, share stories, play games and have a good time. It is important that you come to class prepared to do this and also with all of your supplies such as pen or pencil, loose leaf paper and a notebook for keeping your assignments. See me individually for any questions or concerns regarding supplies.

Make Their Day – If you do nice things for other people then they will do nice things for you. Treat other people as you would like to be treated. Respect your fellow students and anyone else who is in the classroom.

Choose your attitude – You have no control over the things that other people do. You only have control over your reactions. Make a conscious effort to have a positive attitude. It is not always easy but if you are aware that only you can control your mood every day can be a great day.

No food or drinks in the classroom – We might be using substances that may contaminate what you put in your mouth. This is for your own health and safety.

Be Responsible - You are in charge of YOU. I will provide you with the materials to be successful, it is up to you to study and be prepared. This course is rigorous and will require you to study and do assignments and projects.

Technology - Because we are becoming a technology rich campus, we are expanding the use of iPads as a learning tool. The iPads will be increasingly integrated into the curriculum to reinforce critical thinking, collaboration, and cognitive engagement. I will designate during which activities students may use the device, and I will articulate how the device should be used appropriately. If a violation of the stipulated use occurs, consequences will be enforced in accordance with the DVHS Student Handbook.

Grading Standards:

- A 90-100%
- B 80-89%
- C 70-79%
- D 60-69%
- F Below 60%

It is extremely important to attend class. This is where you will be receiving the information to be successful in this course. This class also has a very large lab component which can only be done within the classroom due to the materials being used.. Students who miss a class period and are unexcused will not be able to makeup labs or activities done in class.

Late/Missed Work Policy:

Grades and attendance may be accessed 24 hours a day online with your Power school access code. Access codes are available in the Administration office Monday – Friday 7:00 – 3:30. You must provide a picture ID to be issued a code.

In accordance with school policy there will be no extra credit available!!

Homework-Makeup Work-Long Term Assignments:

Homework assignments are collected at the beginning of class. No late assignments will be accepted. Any assignments handed in without a name, or the name is illegible, will not be accepted. I keep assignments without names for a short time. This does not mean that if you find your assignment in that basket that you can turn it in for credit.

If you are absent, and it is an excused absence, you have one school day for each day missed to make up work. It is your responsibility to find out what you missed and turn in that work to me in a timely manner. The assignments for the week will be posted on the board and the assignments for the whole month as well as any handouts will be posted at the side of the room; check those boards first, and then ask if you have any questions. Assignments missed due to an unexcused absence cannot be turned in for credit.

Long-term projects are due on the due date regardless if the student is in class or not. These assignments are due within the first 5 minutes of the class period. These projects will not be accepted after the due date. If it is not brought into class it is important to have the paper time stamped in the office. See handbook guidelines for any questions. If you are absent for a test, you will make it up the day you return unless you are absent for a long period of time, 4 days or more. If you are absent the day before an exam, you still will take the exam with the class.

Equipment Use Policies:

In the event a student breaks any laboratory materials, that student will be responsible for paying the replacement cost of each item. A complete list of all laboratory materials and their costs are posted in each classroom. The students are taught proper procedures and laboratory etiquette to ensure the safety of our students during lab activities. This policy helps hold the students accountable for their actions and reinforces careful laboratory procedures.

Time Requirement:

You will need to dedicate significant time to this college level course. Plan to spend at least 4 hours a week on homework in addition to class presentation time.

Extra Credit Policy:

Extra Credit is not available for this class.

Plagiarism Warning:

Plagiarism includes, but is not limited to, the use of paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling or sharing of term papers or other academic materials. Information gathered from the Internet and not properly identified is also considered plagiarism. We expect every student to produce his/her original, independent work.

Course content and syllabus may vary from the course calendar listed above in order to meet the needs of the particular group in this course section.

I, _____, have read and acknowledged the Anatomy and Physiology syllabus. I agree to follow the rules and guidelines of the course.

Student Name (Print)

Date

Student Signature

Parent Signature