

# ANATOMY AND PHYSIOLOGY II SYLLABUS

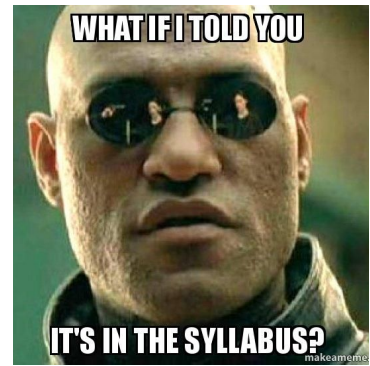
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## REQUIRED TEXTBOOKS AND MATERIALS:

Essentials of Anatomy and Physiology (11th Edition) by Elaine Marieb, The Unity of Form and Function (7th Edition) by Kenneth Saladin, and other materials to be selected by instructor.

## COURSE DESCRIPTION:

Prerequisites: Anatomy and Physiology I (Grade of C or better)

Corequisites: Biology and Chemistry (Grade of C or better)

This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. Laboratory work includes dissection of preserved specimens, microscopic study, physiologic experiments, computer simulations, peer teaching and curriculum development, and multimedia presentations. Completion of this course will provide students with equivalent knowledge and skills of pre-major and/or elective college course requirements.

Course Hours Per Week: M - F; 55 minutes; **Independent Study**

Combination of class work and labs to be worth 1 high school lab science or elective credit.

## LEARNING OUTCOMES:

Upon completion of this course, the student will demonstrate basic knowledge in the following:

1. Describe the major anatomical components of each human body system studied, describe briefly their anatomical locations and general structures, and explain their physiological functions at both the organ and cellular levels.
2. Describe the regulation of the human body and explain how body systems studied are integrated.
3. Apply the concepts learned in the lecture to understand and analyze laboratory activities and observations.
4. Create valuable labs, activities and assessments for peers in the discipline of anatomy and physiology.

## OUTLINE OF INSTRUCTION:

- I. Endocrine system
  - A. Hypothalamic hormones
  - B. Anterior pituitary hormones
  - C. Posterior pituitary hormones
  - D. Endocrine glands
- II. Reproduction
  - A. General terminology
  - B. Male reproductive system
  - C. Female reproductive system
- III. Blood
  - A. Basic hematology - plasma and cellular components
  - B. Hemostasis
  - C. Blood groupings
- IV. Lymphatic system
  - A. Nonspecific and specific defense mechanisms
  - B. Hypersensitivity and tissue rejection
- V. Cardiovascular system
  - A. The heart
  - B. Peripheral circulation
  - C. Regulation of cardiovascular system



## VI. Respiratory system

- A. Pulmonary anatomy
- B. Mechanics of breathing
- C. Measurement of pulmonary function
- D. Control of breathing
- E. Gas laws and gas exchange
- F. Gas transport mechanisms

## VII. Urinary system

- A. Functions
- B. Anatomy of urinary system
- C. The nephron
- D. Urine formation
- E. Composition of urine
- F. Control of urine formation
- G. Clinical correlations
- H. Micturition

## VIII. Acid-base, fluid and electrolyte balances

- A. Extracellular and intracellular fluid compartments
- B. Regulation of electrolytes
- C. Regulation of body water
- D. Physiological buffers
- E. Respiratory control of pH
- F. Renal control of pH
- G. Physiology of acid-base imbalance
- H. Fluid and electrolyte imbalance

## IX. Digestive system

- A. General plan of the alimentary canal
- B. Organs of digestion
- C. Metabolism and nutrition

### GOALS:

*In addition to course content, students will learn to -*

- Think critically, logically, and realistically
- Develop hypotheses and design and conduct scientific experiments
- Write high quality scientific essays citing evidence to support explanations
- Conceptualize, apply, and evaluate information, rather than memorize random facts
- Collect, organize, interpret and analyze scientific data
- Solve problems by using sound scientific methodology and thinking processes
- Learn to critically read, annotate, and summarize challenging informational and technical texts for understanding
- Develop effective communication skills using all four modalities of language
- Master the ability to effectively express ideas in discussion and engage in established classroom discourse
- Develop productive note-taking skills

### SAFETY CONSIDERATIONS:

I like to think that the Anatomy and Physiology experience is supposed to be fun and humor is an essential part of the classroom environment. However, there is a certain element of **potential danger** with **chemicals and sharp instruments** used in the lab (please see **Lab Safety Contract**). Therefore, a **NO TOLERANCE** policy will be observed for behavior problems or safety issues. Behavior problems will first be discussed individually with each student. Students will be treated respectfully as young adults. First-time offenders may be put on lab clean-up duty at lunch or before or after school. Continued problems would involve conferences with parents, the student, and administrators, and **possible removal from the class**. A safe learning environment will be preserved for all students at all times. Safety contracts will be collected and kept on file before students may conduct labs.



## EVALUATION:

The mandatory FUSD grading system is explained below:

- **85% Broken down as follows:** (equivalent to 100% of all grades before the final)
  - **Practice - Formative Assessments** (Homework, papers & assignments). (Some labs, activities, and in-class-projects may be included).
  - **Measurement - Summative Assessments** - (Exams, quizzes, & lab practicals). (Some larger labs, in-class activities, and large projects).
- **15% Final Exam**

## GRADING SCALE:

|             |   |
|-------------|---|
| 89.5 - 100  | A |
| 89.4 - 79.5 | B |
| 79.4 - 69.5 | C |
| 69.4 - 59.5 | D |
| Below 59.4  | F |

## ADVICE AND TIPS For SUCCESS:

The goals from my side of the desk are likely the same as yours when it comes to being a successful Anatomy and Physiology student. I would like to see every student in the class attain a grade of **C or better**. It is really quite simple if you follow **THIS ADVICE**:

- **Show up on time to class EVERYDAY.** Tardies & absences contribute to lost learning experiences that cannot be recovered just by making up assignments.
- **Bring all necessary materials to class EVERYDAY.** Be prepared to take an active part in teaching and learning.
- **Complete & turn in assignments regularly and on time on given due dates.**
- **Daily work, labs, and projects are not accepted late under any circumstances except in case of excused absence or teacher-approved emergency.**
- **Study hard and work well with others.** Expect to read a minimum of 30 minutes per night. **See HW Rubric!**
- **Keep up from the get-go; it is nearly impossible to get out of a hole later on.**
- **Missed work or assessments due to absence are the responsibility of the STUDENT!** Make up times can be arranged at lunch or before or after school.
- Learning can be fun, but nothing worthwhile comes easy.

## STUDY TECHNIQUES:

The most common problem students have is that their study skills are not adequate for high school level classes. Studying for classes involves more than just "cramming the night before a test." Chapter Reviews are provided at the end of each chapter and study resources are posted on Google Classroom for each section studied. The following are suggestions are listed to help improve your grade in Anatomy and Physiology and other high school or college courses.

1. Prepare to participate in class before class begins by reading over your notes you have previously written and also read over the sections of your text that will be covered prior that day's scheduled lecture/activity.
2. Create and use a vocabulary list consistently as you work through each section.
3. Complete all worksheets, study questions, labs, reading assignments, and activities, etc.
4. Keep your handouts, lecture notes, and study questions organized in a notebook.
5. Always read assigned material and outline all the main ideas for each section.
6. Pay attention and actively participate in class.
7. Study frequently and consistently in small doses. ***Cramming does not foster long-term understanding that will stick with you!***
8. Set up a study group and study with friends.
9. Closely study figures, sidebars, and diagrams from lecture and from your text.
10. **If you are having trouble with the material, get help early. Do not wait until TEST DAY!!!**

I am looking forward to an exciting year! Best of Luck and may we learn a lot from each other.

Sincerely, Mr. Smith

