

# DOINGWHATWORKS



SAMPLE MATERIAL

## Anatomy and Physiology Course Syllabi

University Park Campus School, Massachusetts

**Topic:** Helping Students Navigate the Path to College

**Practice:** Prepare Students Academically

Teachers at University Park Campus School (UPCS) focus on giving students skills and experiences they need to succeed in college-level classes. They conduct their classes in a manner similar to college classes. For instance, at the beginning of the fall and spring semesters, students in Anatomy and Physiology receive these course syllabi outlining the lessons and readings.

Anatomy and Physiology I

Fall 2009

Teacher: Ricci Hall

Email: [hallr@worc.k12.ma.us](mailto:hallr@worc.k12.ma.us)

**Required Text:**

Martini, Fundamentals of Anatomy and Physiology, Sixth edition, Prentice Hall

**Required Books:**

Kapit and Elson, Anatomy Coloring Book, 3<sup>rd</sup> Edition, Pearson Education

**Supplementary Readings from:**

Gray and Carter, Gray's Anatomy, Barnes and Noble

Cornett, Experiments in Anatomy and Physiology, Prentice Hall

**Class Meetings/Times:**

Mondays, Fridays (9 am – 10 am), Wednesdays (12:00-1:23)

Room 5, UPCS/ Science Lab as needed

**Exams and Grading:**

Chapter Quizzes (5)	10%
Three Page Paper	10%
Lab Reports (3)	15%
Mid Term Exam (Essay)	20%
7-10 Page Paper	15%
Two Day Final Exam	30%

**Class Participation and Attendance:**

Class participation is a necessary component of this class. If you cannot make class or will somehow miss material, it is your responsibility to see the instructor before the class date to explain your absence and obtain make-up assignments. If you are unable to complete assignments when they are due, it is your responsibility to see the instructor BEFORE it is due. Later papers, assignments, or lab reports will be penalized five points each day it is late, or they may not be accepted.

### **Readings and Assignments**

#### Anatomy and Physiology

##### Overview

Introduction to Anatomy and Physiology (Pages 1-27)      Sept 2, 4, 9, 11

Organ Systems

Homeostasis and System Integration

Frame of Reference for Anatomical Studies

QUIZ Chapter 1

The Chemical and Cellular Levels (Pages 30-104)      Sept 14, 16, 18, 21, 23, 25

Atoms and Molecules

Bonds

Water and Its Properties

Buffers and pH

Organic Compounds

Cell Organization

Cell Membrane

Cell Structures

Cell Life Cycle

**LAB EXERCISE: OSMOSIS LAB REPORT 1 DUE Sept 15**

QUIZ 2 and 3

Osseous Tissue and Skeletal Structure      Sept 28, 30, Oct 2, 5, 7, 14, 16

Axial and Appendicular Skeleton/ Joints

Bone Histology

Bone Markings

Bones of the Axial Skeleton

Bones of the Pectoral Girdle

Bones of the Pelvic Girdle

**LAB EXERCISE: BONES OF THE SKELETAL SYSTEM**

*Three Page Paper Assigned: Homeostatic Imbalance of the Skeletal System*

*DUE: Oct 14*

QUIZ 4,5, and 6

Muscle Tissue/ Muscular System      Oct 19, 21, 23, 26, 28, 30

Anatomy of Skeletal Muscle

Muscle Mechanics

Cardiac Muscle

Smooth Muscle

Muscle Anatomy and Terminology

Axial Muscles

Appendicular Muscles

**LAB EXERCISE: MUSCLES OF THE SKELETAL SYSTEM**

QUIZ Chapter 7

**MIDTERM EXAM**

**Nov 2<sup>nd</sup>**

**Neural Tissue and the Spinal Cord**

**Nov 4, 6, 9, 13, 16**

Overview of Nervous System

Neurons and Neurophysiology

Synaptic Transmission

Gross Anatomy of the Spinal Cord

Spinal Nerves

Spinal Reflexes

**LAB EXERCISE: NEURAL TISSUE**

**The Brain and Cranial Nerves**

**Nov 18, 20, 23**

Organization of the Brain

Support and Protection of the Brain

**LAB EXERCISE: PARTS OF THE BRAIN**

*7- 10 Page Paper Assigned: Homeostatic Imbalance of Brain*

*DUE: Dec 12*

**Autonomic Nervous System and Sensory Function**

**Dec 2, 4, 7, 9, 11**

Sympathetic and Parasympathetic Divisions

Senses (Olfaction, Gustation, Vision, Hearing)

**QUIZ NEURAL**

**The Endocrine System**

**Dec 14, 16, 18, 21**

Pituitary Gland

Thyroid Gland

Parathyroid Gland

Thymus

Adrenal Glands

Kidney

Heart

Reproductive System

Pineal Gland

**LAB EXERCISE: ORGANS OF THE ENDOCRINE SYSTEM**

**QUIZ Endocrine**

**FINAL EXAM**

**DEC 23**

Anatomy and Physiology II

Spring 2009

Teacher: Ricci Hall

Email: [hallr@worc.k12.ma.us](mailto:hallr@worc.k12.ma.us)

**Required Text:**

Martini, Fundamentals of Anatomy and Physiology, Sixth edition, Prentice Hall

**Required Books:**

Kapit and Elson, Anatomy Coloring Book, 3<sup>rd</sup> Edition, Pearson Education

**Supplementary Readings from:**

Gray and Carter, Gray's Anatomy, Barnes and Noble

Cornett, Experiments in Anatomy and Physiology, Prentice Hall

Roach, Mary, Stiff, the Curious Lives of Human Cadavers, W.W. Norton and Co. 2004.

**Class Meetings/Times:**

Mondays, Fridays (9 am – 10 am), Wednesdays (12:00-1:23)

Room 5, UPCS/ Science Lab as needed

**Exams and Grading:**

Chapter Quizzes (5)	10%
Three Page Paper	10%
Lab Reports (3)	15%
Mid Term Exam (Essay)	20%
5 Page Paper	15%
Two Day Final Exam	30%

**Class Participation and Attendance:**

Class participation is a necessary component of this class. If you cannot make class or will somehow miss material, it is your responsibility to see the instructor before the class date to explain your absence and obtain make-up assignments. If you are unable to complete assignments when they are due, it is your responsibility to see the instructor BEFORE it is due. Later papers, assignments, or lab reports will be penalized five points each day it is late, or they may not be accepted.

**Readings and Assignments**

**Anatomy and Physiology**

Blood Jan 4, 6, 8, 11, 13, 15, 20, 22

Plasma

Formed Elements

Hemostasis

**LAB EXERCISE: MICROSCOPY OF FORMED ELEMENTS**

**LAB REPORT 1: DUE Jan 25**

The Heart Jan 25, 27, 29, Feb 1, 3, 5, 8, 10, 12

Anatomy of the Heart

The Heartbeat

Cardiodynamics

**LAB EXERCISE: MICROSCOPY OF HEART MUSCLE**

**LAB EXERCISE: PARTS OF THE HEART**

*Three Page Paper Assigned: Homeostatic Imbalances of the Cardiovascular  
System: Due March 24*

Blood Vessels and Circulation February 22, 24, 26, March 1, 3, 5

Arteries and Veins

Cardiovascular Physiology

Blood Vessels

**LAB EXERCISE: TRACE A DROP OF BLOOD:**

**LAB REPORT2/ Blood Pressure and Pulse LAB**

**TEST March 12**

**QUIZ: Cardiovascular**

Respiratory System March 8, 10, 12, 15

Overview of Structures

Respiratory Physiology

Control of Respiration

**QUIZ Respiratory**

**MIDTERM EXAM**

**MARCH 17**

The Digestive System Structure and Function of Digestive Tract Organs of Digestion	March 19, 22, 24, 26, 29, 31
Metabolism and Energetics/ Nutrition Carbohydrate, Lipid, Protein, Nucleic Acid Diet and Nutrition Bioenergetics <b>LAB EXERCISE: NUTITION IN YOUR LIFE: REPORT 3</b> <b>DUE April 26</b> <i>5 Page Paper Assigned: Homeostatic Imbalances of either Respiratory/ Digestive/ Metabolism DUE <u>May 14</u></i> QUIZ: Digestive and Metabolism	April 5, 7, 9, 12, 14, 16
Urinary System Organization of Urinary System Kidneys and Renal Physiology Fluid/ Electrolyte Balance	April 26, 28, 30, May 3, 5, 7
Reproductive System Organization of Male/Female reproductive systems Physiology of sexual functions QUIZ: Urinary and Reproductive	May 10, 12, 14, 17, 19
<b>FINAL EXAM</b>	<b>MAY 24 and 26</b>

## Plan for Day #1

1. Introduction to Anatomy and Physiology Class 15 min
  - a. Contracts and Academic/Behavioral Expectations
  - b. Goals
    - i. Love and learn about the body
    - ii. Thinkers
    - iii. College-Like
  - c. Themes
    - i. Homeostasis and Imbalances
  - d. Routines
    - i. Journals
    - ii. Folders
    - iii. Portfolios
    - iv. Discussions
    - v. Weekly Syllabus
    - vi. Tests (Variety)
    - vii. Projects (Cooperative)
  - e. Syllabus
    - i. Handout
    - ii. General
    - iii. Week One Explanation
  - f. Handout
    - i. Journals
    - ii. Folders
    - iii. Books
    - iv. INDEX CARDS
2. Journal Entry: Why study Anatomy and Physiology? What do you hope to get out of this? Describe a time when either you, or someone you know, was told about something happening to your body that was confusing or that you did not understand? 15 min
3. Lecture/Discussion 30 min
  - i. Anatomy and Physiology
  - ii. What is Homeostasis, Give Examples: Maintain Body Temperature or Vital Signs
  - iii. Levels of Organization: Atoms, Molecules, Cells, Tissues, Organs, Organ Systems, Organism
  - iv. Major Systems: Integumentary, Skeletal, Muscular, Nervous, Endocrine, Cardiovascular, Lymphatic, Respiratory, Digestive, Urinary, Reproductive
4. Create Study Sheet for Charts 15 min
5. Game using directional terms, body cavities, and planes