

# INTRODUCTION TO ANATOMY & PHYSIOLOGY

**BIO 204**  
Spring 2010

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Office Hours: T & Th 1:30 – 2:30pm or by appointment

## **Textbooks:**

### **Lecture**

Marieb, E.N. (2009). *Essentials of Human Anatomy & Physiology*. Ninth Edition. Benjamin Cummings Publishers. ISBN 0321513428

### **Laboratory**

Marieb, E.N. (2009). *Essentials of Human Anatomy & Physiology Laboratory Manual*. Fourth Edition. Benjamin Cummings Publishers. ISBN 0321523997

Safety goggles

Dissection kit – one per lab group

### **Optional**

Marieb, E.N. (2009). *Anatomy & Physiology Coloring Workbook*. Ninth Edition. Benjamin Cummings Publishers. ISBN 080534778X

## **Course Description:**

This offering of ANATOMY AND PHYSIOLOGY will review the basic biology and chemistry of human beings and then proceed to an indepth study of the tissues and major organ systems in the human body. Students will learn aspects of both structure and function in each of these system areas.

## **Goals and Objectives:**

The purpose of this course is to obtain a solid working knowledge of mammalian anatomy and physiology with a specific emphasis on the human. All students are expected to work to their fullest potential in an effort to achieve this goal. Any student presenting special needs may request assistance. This request should be made within the first 2 class sessions to obtain the benefit of early assistance. Each request will be evaluated based on what is fair and equitable for the student and for the class as a whole.

**Course Rationale:**

INTRODUCTION TO ANATOMY AND PHYSIOLOGY will be an important foundation course for art majors. This course will serve as an introduction to the study of the human body in the areas of both structure and function. Later art coursework involving the human body will require a solid basic knowledge and understanding of the major tissues, organs and organ systems.

**Course Objectives:**

The objectives for this course are listed below. The student is to acquire a working knowledge of:

- names, identification and location of cell and tissue types
- anatomical layers of the skin and functions of the skin
- names of cells and extracellular materials of bone tissue
- physiology of bone formation, growth and repair
- names and location of all bones in the axial and appendicular skeleton
- names, locations and functions of all types of articulations
- names of cells and extracellular materials of skeletal muscle tissue
- physiology of skeletal muscle contraction
- names, locations and functions of selected skeletal muscles
- names of cells and extracellular materials of nervous tissue
- physiology and chemistry of nerve cell transmission
- names, locations and functions of selected spinal cord nerves
- names of the regions of the brain
- function of each region of the brain
- names, locations and functions of all cranial nerves
- physiology of sensation and perception
- anatomy and physiology of somatic sensory pathways
- major anatomical structures and functions of vision
- major anatomical structures and functions of hearing
- major anatomical structures and functions of smell
- sympathetic and parasympathetic divisions of the autonomic nervous system (ANS)
- names, locations and functions of selected ANS nerves
- names and tissue composition of identified endocrine organs
- names, chemical composition and physiologic action of specified hormones
- composition of blood - fluid and cellular and physiologic roles
- names of major tissues, chambers and vessels of the heart and route of blood flow
- physiology of cardiac muscle
- names and anatomical layers of specified systemic arteries and veins
- physiology of blood flow
- composition and function of lymph fluid
- names and location of major lymph nodes
- names and location of each section of the respiratory tract
- tissue types and function of each part of the respiratory tract
- inflation/expiration of air into the lungs
- alveolar/blood exchange of gases - structure and function

- blood/tissue exchange of gases - structure and function
- names and location of each section of the digestive tract
- tissue types and function of each part of the digestive tract
- digestive process from beginning in mouth to absorption in intestine
- structures and functions of excretory system for solid wastes
- physiology of regulating food intake, basal metabolic rate, body temperature, food metabolism and energy production
- names and location of each section of the urinary tract
- mechanisms of homeostasis
- names and location of each section of the ♀ and ♂ and reproductive tracts
- physiologic processes of reproductive cycles, conception, pregnancy and delivery
- embryonic development and genetics of inherited traits

**Class Attendance:**

Class attendance in lecture and laboratory is mandatory as per the Chester College Catalog page 35. Absences in excess of three class meetings are grounds for academic withdrawal from the course. In the event of illness or serious personal matters, please notify the instructor of your absence as soon as is feasible. All students attending class are asked to afford courtesy to the Instructor and their fellow classmates by please adhering to the following:

- Raise your hand when you wish to be recognized for a comment or question.
- Please do not talk during the lectures except when recognized by the Instructor or when in discussion sections.
- Please turn off or disarm the ringer on cellular phones and pagers.

**THANK YOU FOR YOUR CONSIDERATION IN THESE MATTERS**

**Web Access:**

Class lecture slides and material will be available on the college website at [www.chestercollege.edu/litchgray](http://www.chestercollege.edu/litchgray). The text also has website support at [www.aw.com/marieb](http://www.aw.com/marieb) and [www.aw.com/tutorcenter](http://www.aw.com/tutorcenter).

**Testing:**

Tests/quizzes will be comprised of short-answer, matching, multiple choice and short essay questions. There are no scheduled make-ups for exams. Please notify the instructor of an absence prior to the class or as soon as is physically possible. Laboratory sections have practical exams where students progress through question stations observing items seen previously in lab.

**Academic Honesty Policy:**

Please note the Academic Honesty Policy as is mandated in the Chester College Academic Catalog on pages 39-40 and required to be adopted by all students. All are reminded that academic dishonesty is unethical and a violation of the academic honesty policy of the College. Any student found guilty of academic dishonesty will be subject to the penalties in the catalog. Please refer to and abide by this policy as written.

**Class Project (Paper) and Presentation:**

Each student will be required to select a disease or disorder topic of individual interest and write a paper (text **minimum** of 5 typewritten double spaced pages excluding reference page - font size no less than 10). Only one student per topic will be accepted therefore the sooner you choose your topic the greater the chance that it has not already been selected by another classmate. The contents of the paper must include 1) a clinical description of the disease or disorder, 2) causes or influencing factors, 3) target population, 4) target cells, tissues, organs or organ systems, 5) clinical management, and 6) prevention or cures. In addition to submission of the paper, each student will be responsible for a 5-7 minute presentation of his or her paper as if in a clinical setting. Students are encouraged to choose interesting topics and assistance will be available in the choosing of topics if needed. **The chosen topic and/or title must be submitted and approved by February 3<sup>th</sup> (late topics will lose 5 pts.).** The written paper will be due on **April 14<sup>th</sup> (late papers will lose 5 pts./day late).** The presentations will be held in class on **April 28<sup>th</sup> & May 5<sup>th</sup>.** In the presentation each student will need to convey the details of the paper in a very concise manner. The presentation will include a PowerPoint projection and will be approximately 5 minutes in length (not very long - although to some it may seem an eternity!).

**Class:**

3 Class Exams & Cumulative Final (100 pts. each; lowest grade dropped)	300 pts.
Class Project (Paper) and Presentation	<u>100 pts.</u>
	400 pts.

**Laboratory:**

Laboratory Practical Exams – Midterm & Final (50 pts. ea)	100 pts.
Laboratory Notebook	<u>120 pts.</u>
	220 pts.

<b>Total Grade:</b>	660pts.
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	<u>Date</u>	<u>Topic</u>	<u>Chapter(s)</u>
January	20	The Human Body: An Orientation	1
	25	Cells and Tissues	3
	27	Skin and Body Membranes	4
February	1	Skeletal system	5
	3	con't	
	8	Muscular System	6
	10	con't	
	<b>15</b>	<b>President's Day – no class</b>	
	17	cont'	
	22	Nervous System	7
	24	<b>EXAM I (Chap. 1, 3-6)</b>	
March	1	Nervous Sys. con't	
	3	Special Senses	8
	8	Endocrine System	9
	10	Blood	10
	<b>15 &amp; 17</b>	<b>Semester Break – No Class</b>	
	22	Cardiovascular System	11
	24	con't	
	29	con't	
	31	Lymphatic System	12
April	5	<b>EXAM II (chap. 7-11)</b>	
	7	Respiratory System	13
	12	Respiratory con't	
	14	Digestive System	14
	19	con't	
	21	Urinary System	15
	26	Reproductive System	16
	28	Paper Presentations	
May	3	<b>EXAM III (chap. 12-16)</b>	
	5	Paper Presentations	

FINAL EXAM - date to be announced

INTRODUCTION TO ANATOMY & PHYSIOLOGY LAB

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DATE	LAB	EXERCISE	DISSECTION	COLORING BOOK
1/27	1. Language of Anatomy, Cell	1,3	1	1
2/3	2. Classification of Tissues Integumentary System	5, 6	2	3, 4
2/10	3. Skeleton	7, 8, 9, 10	3	5
2/17	4. Muscular System	12	4	6
2/24	5. Muscular System	12	5	6
3/3	6. Nervous System	13, 14, 16	6	7, 8
3/10	<b>PRACTICAL EXAM I</b>			
3/17	<b>Semester Break – no lab</b>			
3/24	7. Special Senses & Endocrine System	17, 18	7	9
3/31	8. Cardiovascular System	20, 21	8	11
4/7	9. Blood Pressure & Pulse	22	9	
4/14	10. Respiratory System	23, 24	10	13
4/21	11. Digestive System	25	11	14
4/28	12. Urinary System Reproductive System	26 27	12	15 16
5/5	<b>PRACTICAL EXAM II</b>			