

SEMESTER OVERVIEW, A & P 250, SPRING 2010 -- B. Rose

<u>Topic</u>	<u>Text Readings</u>	<u>Lab Exercises</u>
<u>Unit One:</u>		(do lab chapters in this order)
Histology & the Integument,	Chap. 5, 6	5, p 85, p155-157.5, 250-254
History of Science, Body Terminology	Chap. 1	6 1

Lecture & Lab Exams: Wed., Feb. 17

<u>Unit Two:</u>		
Skeletal System & Articulations	Chap. 8, 9	7, 8, 9

Lecture & Lab Exams: Wed., Mar. 3

<u>Unit Three:</u>		
Muscular System & Physiology	Chap. 10, 11	Dissection Exercise 2 10, 11, 12

Lecture & Lab Exams: Wed., Mar. 17

<u>Unit Four:</u>		
Nervous System, Integration & Control	Chap. 12, 13, 15	13, 14 15, 16 Histology again

Lecture & Lab Exams: Wed., Mar. 31

<u>Unit Five:</u>		
The Senses	Chap. 16	17
Endocrine System & Stress	Chap. 17 (parts)	18, p 548, 564-566 Histology

Lecture & Lab Exams: Mon., Apr 19

<u>Unit Six:</u>		20
Circulatory and Lymphatic Systems (blood will be studied with next unit) 84.4 & Histology	Chap. 19, 20, 21 (parts)	p609-652 23 (parts) 21, p501 & 506 22, Histology

Lecture & Lab Exams: Mon., May 3

<u>Unit Seven:</u>		
Blood—Hematology	Chap. 18	19
Immune System	21	23
Respiratory System	22	24, 25

**Lecture Exam: Wed., May 12
(Lab exam will be combined with Unit 8)**

<u>Unit Eight:</u>		
Digestive System	Chap. 25	26, Histology
Metabolism	Chap. 26 (parts)	27, Nutrition/Calories
Excretory System	Chap. 23-24	28, 29
Reproductive Systems	Chap. 27, 28	30, 31 p 653-666

**Lecture Exam: Wed, May 27; Lab Exam sometime Thurs., May 27
(Note: Lab exam will cover units 7 and 8)**

Cumulative Lecture & Lab Finals: Thursday, June 3, 4pm-7pm

BIOLOGY 250 — HUMAN ANATOMY AND PHYSIOLOGY — 8 UNITS

Instructor: Mrs. Betty Rose, Office ALLB-205 Voice mail: (661) 362-3371
Email: betty.rose@canyons.edu

Prerequisites: Biology 107 (a majors course in Cell and Molecular Biology) with a grade of "C" or better

Text: *Anatomy and Physiology* by Saladin, 5th Ed., (**optional**)
Human Anatomy & Physiology Lecture Notes, Etc. by B. Rose Published by COC Foundation, 2005 (will be given out in class)

Laboratory Text: *Laboratory Investigations in Anatomy and Physiology*, by Stephen N. Sarikas, 2nd Edition, (**required**)

LECTURE TOPICS & TOPICS OF IMPORTANCE FOR THE FIRST UNIT

Topic:	Text	&	Lab
	Chapter(s)		
Methods of Science	Lecture		
Anatomy, Physiology, Histology, Cytology, Subsclences of Biology	Lecture		
History of Anatomy and Physiology	Lecture		
Classification of Humans	Lecture		
Body Organization	1		1
Cell Level			
Tissues			
Organs			
Organ Systems			
Terminology of Anatomy and Physiology	1		1
Body Regions			
Body Cavities			
Body Membranes			
Planes of Reference			
Anatomical Position			
Directional Terms			
Histology	5		5
Types of Tissues			
Embryology of Tissue Development			
Epithelial Tissue			5
Connective Tissue			p 85
Muscle Tissue			p 155-157,5
Nerve Tissue			p 250-254
The Integumentary System	6		6
Development			
Layers of the Integument			
Integumentary Derivatives			
Function of the Integument			
Glandular Epithelia			
Clinical Considerations			

FIRST UNIT LECTURE & LAB EXAMS

OUTLINE OF LECTURE TOPICS & TOPICS OF IMPORTANCE FOR THE SECOND UNIT

Topic:	Text	&	Lab
	Chapter(s)		
Skeletal System	8, 9		7, 8
Organization			
Functions			
Development			
Bone Structure Including Histology			
Bone Growth			
The Skull			
The Vertebral Column			
The Pectoral Girdle & Upper Extremities			
The Pelvic Girdle & Lower Extremities			
Clinical Considerations			
Articulations	9		9
Kinds of Joints			
Classified by Structure			
Classified by Function			
Synarthroses			
Amphiarthroses			
Diarthroses (freely moving joints)			
Kinds of Movements at Joints			

SECOND UNIT EXAMS

OUTLINE OF LECTURE TOPICS & TOPICS OF IMPORTANCE FOR THE THIRD UNIT

Muscular System	10, 11		Diss. Ex. 2
Naming of Muscles, Actions, Origins, Insertions and Functional Groups			10, 11, 12
Macroscopic and Microscopic Muscle Structure			histo (again)
Muscular Physiology: Responses of Single Cells and Whole Muscles			
Macroscopic and Microscopic Mechanisms of Muscular Contraction			
Neuromuscular Junctions, Chemo electrophysiology of Neurons and Synaptic Transmission			
Clinical Conditions			

THIRD UNIT EXAMS

OUTLINE OF LECTURE TOPICS & TOPICS OF IMPORTANCE FOR THE FOURTH UNIT

Central Nervous System	12, 13, 15		13, 14
Gross Anatomy			
Brain			
Spinal Cord			15
Neurons & Impulses			16
Peripheral Nervous System			histo (again)
Autonomic Nervous System			

FOURTH UNIT EXAMS

Topics in Second Half of Course	Text Chapter(s)
Sensory Organs	16
Development	
Classification	
Sensory Receptors	
Somatic Sensors	
Olfaction	
Gustation	
Vision	
Hearing and Balance	
Endocrine System	17 (parts)
Hormones	
Mechanisms of Action	
Development	
Typical Glands	
Pituitary	
Adrenals	
Thyroid	
Parathyroid	
Pancreas	
Others	
Regulation by the Anterior Pituitary and the Hypothalamus	
Clinical Considerations	
Stress	

FIFTH UNIT EXAMS

The Circulatory System	19, 20, 21
The Structure and Function of the Circulatory System	
Development	
Structures and their modifications	
Circulation Routes	
Cardiac cycle	
Heart sounds	
Electrical activity	
Blood Vessels	
Arteries	
Veins	
The Lymphatic System	
Cardiac Output, Cardiac Rate, Blood Volume and Pressure	22 (lab book)
Cardiac output	
Blood volume	
Vascular resistance	
Blood flow to special regions (heart, skeletal muscles, brain, skin, digestive organs)	
Blood pressure	
Hypertension, shock, & congestive heart failure	

SIXTH UNIT EXAMS

Hematology

Blood Composition

Plasma

Plasma Proteins

Electrolytes

Complement Proteins

Formed elements

Hemopoiesis

Clotting

Disorders

Immune System

Non-specific defense mechanisms

Specific immunity

Humoral immunity

Cell-mediated immunity

Self and Non-self Recognition

Histocompatibility antigens

Red blood cell antigens

Tumor immunology

Immunizations

Autoimmunity

Immune complex diseases

Allergy

22

Respiratory System

Overview of Function and Structure

Development

Respiratory Structures and their Histology

The conducting passageways

Alveoli, lungs, and pleura

Physiology of ventilation

Physical properties of lungs

Mechanical aspects of breathing

Regulation of breathing

Gas exchange

Hemoglobin and oxygen transport

Carbon dioxide transport

The Effects of Altitude and Exercise

Clinical Considerations

22

SEVENTH UNIT EXAMS

The Digestive System	25, 26
Structures and Functions	
Supportive Structures	
Tunics of the GI Tract	
Digestive Structures, Their Products and Specializations	
Digestion and Absorption	
Regulation of the Digestive System	
Common Disorders	
The Regulation of Metabolism	
Vitamins, minerals and calories	
Hormonal regulation of metabolism (insulin, glucagon and somatostatin)	
Regulation by the adrenal hormones, thyroxine and the growth hormone	
Calcium and phosphate balance	
Clinical considerations	
Excretory System	23, 24
Development	
Kidney Structure	
Ureters, urinary bladder, urethra and the micturition reflex	
Kidney physiology	
Renal control of electrolytes	
Renal control of pH	
Clinical considerations	
Reproductive Systems	
Male Reproductive System	27
Overview of male sex structures and characteristics	
Development	
Sex determination	
Embryonic and fetal development	
Puberty	
Structure and Functions of the	
Testes	
Spermatic ducts	
Accessory glands	
Penis	
Mechanisms of erection, emission, ejaculation and orgasm	
Impotence, infertility, sterility and vasectomies	
Sexually-transmitted diseases and other disorders	
Female Reproductive System	28
Overview of female sex structures	
Structures and their functions	
Mechanism of erection and orgasm	
Lactation, mammary gland structure and function	
The menstrual cycle	
Phases of the ovarian cycle	
Endometrial phases	
Clinical Considerations	

EIGHTH UNIT EXAMS

GRADING POLICIES

LECTURE EXAMS: Eight lecture exams and a comprehensive lecture final will be given. The comprehensive **finals will be given on Thursday, June 3rd, time to be determined.** Each exam will be worth 100 points. Exams will consist of multiple choice, true-false, matching and essay questions. Periodically, additional assignments totaling 100-200 points may be made.

LABORATORY PRACTICAL EXAMS, 800-900 points, include:

- A. Laboratory write-ups
- B. Seven one hundred point laboratory practical exams
- C. A one hundred point comprehensive final lab practicum

LABORATORY AND LECTURE SUBJECTIVE PERFORMANCE EVALUATION: Subjective points may lower your grade by 10 percent. In addition to the objective points earned on lecture and lab exams, your laboratory and lecture performances will also be evaluated subjectively. Negative behaviors detract from the learning environment and may lower your grade. Positive behaviors that enhance the learning environment include all of the following:

- A. Class participation (in both lecture and lab settings)
 - 1. Quantity. It is hoped that each student will contribute to the class environment. A student who participates too much or too aggressively can have a more detrimental effect on class morale than a student who contributes little.
 - 2. Quality. "Quality" contributions enhance the learning environment and everyone's understanding of the subject matter. Relevant stories and experiences, arriving at class on time, avoiding negativity, working at being positive and self-confident, and helping others (except on tests!) are examples of positive contributions. Behaviors that detract from the learning environment include noisily proffering the attitude, "I can't possibly grasp this material in such a short time;" arriving to class late and/or noisily; attempting to monopolize the classroom or hog the instructor's time or attention; being a "show-off-know-it-all," judging others as being "show-off-know-it-alls," and forming gossipy cliques.
- B. Preparedness for lab (all labs are to be read before lab begins)
- C. The amount of effort used to figure out the lab by yourself
- D. The amount of effort put into lab

COURSE GRADE

The final course grade will be figured by totaling all possible points. Of the total possible points,

90% or above	=	A***	60%-69.95%	=	D
80%-89.95%	=	B	Below 59%	=	F
70%-79.95%	=	C			

The percentages necessary to achieve a particular grade will not be raised, but might be lowered. In the event they are lowered, the grades will be fitted to a modified curve. It is to everyone's advantage to work together, study together, and help each other to understand the material. However, individual work is appropriate on exams, quizzes, and lab write-ups.

*****In order to achieve an "A" grade, in addition to averaging 90% or better, students need to complete a special project that will be discussed later. No extra credit points are given for this.**

MAKEUP POLICY

No makeup tests will be given. In order to compensate for unforeseen disasters, your lowest 2 one-hundred point exam scores will be dropped before figuring the final averages. However, PLEASE let me know before the test, if possible, if anything drastic happens in your life.

MISCELLANEOUS INFORMATION ABOUT COC COURSES, PROGRAMS AND POLICIES

BIOSCI 250 COURSE CONTENT AND OBJECTIVES: A one semester course (8 units) covering the structure and function of the human body. For a full list of learning objectives, visit them online at <http://www.canyons.edu/offices/curriculum>. Choose the public access option.

STUDENT LEARNING LECTURE OUTCOME:

1. For each body system or unit, identify, describe, and draw the anatomical structures (organs, tissues, cells, cell products) for the integumentary system, skeletal system, the muscular system, and the nervous system, for the endocrine system, the sensory system, the circulatory system, the immune system, the respiratory system, the digestive system, the excretory system, and the male and female reproductive systems, and evaluate the functions of each, describing the physiological mechanism by which each works to maintain health and homeostasis.

STUDENT LEARNING LABORATORY OUTCOME:

1. Recognize, name, identify and analyze the functions of pertinent anatomical structures (organs, tissues, cells, cell products) for each organ system studied.

MATHEMATICS, ENGINEERING, SCIENCE ACHIEVEMENT (MESA):

MESA is a program that supports students in their efforts to excel in math, engineering, and the sciences. It is a rigorous program that builds academic skills and encourages cooperative behavior and problem-solving. There is access to technology. Academic advisement and other support services are available. For more information, please contact the MESA Program Director in ALLB-114 or call (661) 362-3448.

STUDENT CONDUCT POLICY:

- Read and adhere to *Students Rights and Responsibilities* in the *Schedule of Classes*.
- Conduct yourself in a safe and considerate manner at all times (lecture and lab)
- Disruptive behavior, racist, sexist or otherwise inappropriate comments will not be tolerated, and if continued, ejection from the class will occur.
- Any and all forms of cheating will not be tolerated: Plagiarism (use of other's ideas without giving credit) is a violation of COC's Code of Conduct and students caught in any manner of cheating will be turned over to the Dean of Students for disciplinary action.

STUDENT SUCCESS: This Biology course is not easy; it requires your total dedication and concentration. Please, follow these suggestions, put in the required time, and you should be able to earn a good grade.

- Cultivate a positive attitude toward learning; find ways to make the material fun or relevant to you.
- Read the assigned materials ahead of time.
- Do not be afraid to ask questions in lab or lecture.
- Review your lecture notes immediately after class and consult texts or classmates to understand any unclear topic.
- Learn the new vocabulary; treat this course as if it is a foreign language class.
- Do the entire lab, stay the full time and put in extra lab time as often as possible.
- Form study groups .
- Turn off cell phones during class! Cell phones will be confiscated if you are receiving text messages.
- Take advantage of the study packages the Biology Computer Room, BYKN-211.

OFFICE HOURS:

Mon./Wed.	3:45pm-4:00pm	ALLB-223
Tuesday	2:45pm - 1L00pm	BYKH-205
	5:20pm-5:30pm	ALLB-221
	6:50pm - 7pm	ALLH-104
	8:20pm - 8:30pm	ALLB-221

Thursday	5:20pm - 5:30pm	ALLB-221
	6:50pm - 7pm	ALLH-104
	8:20pm - 8:30pm	ALLB-221

Other Times by Appointment/Always available by email.

