

BIO 2300 – Human Anatomy and Physiology I – Fall 2008

(Note: Portions of this document subject to revision)

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Office hours: posted on office door

Prerequisites: BIO 1100 (and preferably BIO 1200)

Course Schedule:

Lecture: Monday, Wednesday 6:30 pm – 7:45 pm

Lab: Wednesday 8:00 pm – 9:20 pm

Required Texts: Marieb, Elaine. *Human Anatomy & Physiology*. Pearson, Benjamin Cummings, publisher.

Marieb, Elaine. *Human Anatomy & Physiology Laboratory Manual, Cat Version*, 8th edition.
Pearson, Benjamin Cummings, publisher.

Course Description: This course focuses on the cellular and biochemical aspects of anatomy and physiology and begins the study of the different organ systems. This course will cover cell structure and function and the skeletal, muscle and nervous systems. The laboratory portion of the course will stress the anatomy of the different organ systems.

Purpose: The purpose of the course is to enable the student to acquire a better understanding of the human body and its anatomical parts. The course emphasizes laboratory dissection technique, and comparison of feline and human anatomy.

Objectives: Students will master the following critical concepts and utilize them in appropriate scientific applications.

1. Basic anatomical vocabulary and body plans.
2. Basic chemistry, and biochemistry
3. Cell structure and function
4. Tissue types and organization
5. Understanding of human organ systems including:
 - a. Integument
 - b. Skeleton
 - c. Muscle
 - d. Nervous and Sensory
6. Comparison of human and feline anatomy with regard to organ systems through dissection.
7. Good dissection technique.

Course Assessment and Evaluation:

Students' understanding of the material covered in this course will be assessed by periodic examination, critical thinking assignments based on clinical applications, and hands-on laboratory work including dissection in keeping with the Greensboro College objective #10 of investigation of the natural world in a scientific manner.

The overall evaluation and semester grade will be based on several criteria, including the following:

Lecture examinations	40%
Laboratory grade	30%
Assignments, quizzes, attendance	10%
Final examination (comprehensive)	<u>20%</u>
Total	100%

Grades will be assigned according to the following policy:

Scale: <u>Majors</u>	<u>Non-Majors</u>
A = 90 – 100	A = 90 – 100
A- = 89	A- = 88-89
B+ = 87-88	B+ = 86-87
B = 80-86	B = 80-85
B- = 79	B- = 78-79
C+ = 77-78	C+ = 76-77
C = 70-76	C = 70-75
C- = 69	C- = 68-69
D+ = 67-68	D+ = 66-67
D = 60-66	D = 58-65
F = below 60	F = below 57

POLICIES

Attendance

Professionals are expected to keep all appointments and to show up on time. As an educated person who will become a professional, you must develop the habit of attending all classes and labs and arriving on time. Regular and punctual class attendance is expected of all students. Responsibility for class attendance rests with the individual students. A student must accept the consequences of failure to attend. The instructor will drop a student from a course for excessive absences. All students (including those who enroll in classes late) are responsible for work covered and assigned from the first meeting of a class. **In addition, students arriving late might miss pop quizzes and important information regarding exams, tutoring, and/or assignments, which will not be repeated.**

Attendance is mandatory for satisfactory performance in the course. Both missed laboratory and lecture sessions count towards the limit of absences allowed for this course. Absences can be excused only for:

- 1: personal illness with written verification by a health care provider
- 2: death in the family
- 3: official Greensboro College functions

Since part of the course evaluation is based on attendance any student missing three lab periods (excused or not) may be dropped with a grade of F

PLEASE NOTE THAT THE LABORATORY COMPONENT OF THIS COURSE IS MANDATORY AND INCLUDED IN THE ENTIRE COURSE GRADE.

Excused Absences

If you miss a class period you must **contact the instructor as soon as possible!** You must provide written verification of the reason for the absence to get credit for any missed work. You must try to make up a lab at another time if possible. Once a lab is finished you may not be able to make it up as materials used during lab may be perishable or in use by other classes. A missed lecture exam must be made up **within 48 hours** unless otherwise agreed to by the instructor. Any homework due must be turned in 48 hours after the missed class period to receive any credit.

Unexcused Absences

No credit will be given for assignments, labs or exams if an absence is unexcused.

STUDENT RESPONSIBILITY

Performance - It is the student's responsibility to keep track of performance in the course. While the instructor will be keeping a grade sheet, it is the student's responsibility to monitor their own performance as all graded work except the final exam will be returned. The instructor is not required to notify a student of a failing grade or poor performance but may report it to Academic Affairs.

Materials - Lab materials are often expensive or hard to replace. Please notify the instructor immediately if anything gets damaged or broken. Students will not necessarily be responsible for the cost of replacement unless gross negligence or purposeful destruction has occurred.

Professional behavior in class: - Students are expected to behave as professionals in class. This means no side conversations during lecture or lab, and **absolutely no cell phones going off in class**. If one or two hours is absolutely too long to be out of touch with whomever, please notify the instructor of the impending call and the reason for the call and set your phone to **"pulse"**. **Without exception, students will be excused if I hear their phone and not allowed to return to class!**

PLAGIARISM – “To take and pass off as one's own (the ideas, writings, etc. of another).” Webster's New World Dictionary, College Edition, 1966. Copying, or paraphrasing a source without giving credit for that source, is plagiarism.

All work should be your own work, in your own words. You may use specific quotes from other's work only if proper citation is given for that quotation. Plagiarism in any homework or other assignment in this class will result in a grade of zero for that assignment.

Part of your grade for this course may be calculated from homework assignments. Your instructor understands that students will talk among themselves about how assignments should be done. Study groups are encouraged as communal learning is a useful tool. However, all homework turned in **SHOULD BE YOUR OWN WORK, IN YOUR OWN WORDS, and NOT COPIED EITHER MANUALLY OR PHOTOCOPIED** from someone else's work. Any work that appears to be written in a collaborative way, copied word for word, or simply rephrased using the same words is deemed **PLAGIARISM** and against the Greensboro College Honor Code. Any students suspected of plagiarism may be confronted by the instructor for an explanation or may simply have a grade of “0” (zero) on the assignment.

Special Needs Statement:

Greensboro College is committed to meeting the needs of students with disabilities. Compliant with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act, Greensboro College does not discriminate against otherwise qualified candidates in regards to college life.

If you require special accommodations, it is your responsibility to communicate them to the instructor. You may also arrange a meeting with the Coordinator of Disability Services for an assessment of special needs.

NCATE Accreditation Statement:

The Teacher Education Program at Greensboro College is accredited by the National Council for Accreditation of Teacher Education (NCATE), 2010 Massachusetts Ave., NW, Suite 500, Washington, DC 20036; phone (202) 466-7496. This accreditation covers initial teacher preparation programs.

Teaching and Learning approaches:

Students will use the textbook, reference books, the Internet, and scientific periodicals to obtain information.

Lectures with visual supplements, films, guest speakers, demonstrations, case studies and other critical thinking exercises will guide students in acquiring the factual material needed.

Discussion sessions, debates, group presentations, computer software and tutorials will help students express what they understand, to identify ideas that they do not understand, and to acquire additional insight and information from their peers.

Laboratory sessions will allow students to see the materials and biological phenomena discussed in lecture, to identify structures in microscope slides, on organisms, and on models, and to work with the information and concepts presented in lecture by performing experiments, dissections, and analyzing data.

Part of a lecture period will be devoted to review and discussion in an effort to provide faculty tutoring. Students should also take advantage of any departmental tutoring opportunities offered.

Expected Educational Outcomes:

Students, on completing the course, should be able to do the tasks listed under each topic taught (see Curriculum Units below).

CURRICULUM UNITS

Upon completion of each unit, the student should be able to complete the tasks (Expected Educational Outcomes) listed below.

1. The study of Anatomy

Define the word anatomy

Identify body planes, quadrants, and movement directions

2. Inorganic and organic chemistry

Distinguish between atoms, elements and molecules

Explain how electron distribution is related to chemical reactivity, and type of chemical bond formed

Explain why carbon is so important in biological systems

Describe the general structure and biological importance of common organic molecules (carbohydrates, lipids, proteins, nucleic acids)

3. Cells:

Describe the basic structure of cells.

Describe the basic functions of the major cell organelles.

Demonstrate the use of the microscope in viewing cells and tissues.

4. Tissues:

Define tissues in terms of their cell makeup

Describe each type of cell junction that forms tissues

Describe each of the four main tissue categories

Know where each tissue type can be found in the body

Be able to recognize each tissue type if presented on a slide

5. Integument

Know the structure and function of the integument

Define each component of the integumentary system

Know each skin layer, the anatomy of hair and nails

6. Skeletal System

Know the structure of bone tissue and be able to identify its components

Describe how bone is formed

Identify the major human bones, their location, and their features

Describe the structure, function and location of the major joints

Identify major joints and components

7. Muscular System

Describe the structure of each type of muscle tissue and where it can be found

Locate and identify the major muscles of the human body

Locate and identify the major muscles of the cat by means of dissection

8. Nervous System

Recognize and describe the basic anatomy of nerve tissue

Differentiate between the central and peripheral nervous systems

Describe how, when, and why, each branch of the nervous system functions

Identify the location of, name, and number of all cranial nerves

Identify the location of major anatomical parts of the human and sheep brain

Identify the location of major anatomical parts of the human spinal cord and nerves

9. Special Senses

Name the five special senses

Describe the structure and function of the anatomical parts used by each sense

Identify the special receptors used by each sense and their relationship to the brain

10. Digestive, Respiratory, Endocrine and Circulatory Systems

Identify the major organs involved in each system by means of dissection

Identify the major vessels of the circulatory system

Identify the parts of the heart

LECTURE SCHEDULE (subject to change)

CONTENT WILL BE STUDIED IN THE ORDER LISTED BELOW AT A PACE SET BY THE INSTRUCTOR

topic

reading

Introduction; Orientation; Biomolecules

chs. 1-2 (part)

Biomolecules, Cells & Tissues

chs. 3 (part)-4

Tissues, Integument

ch. 4, 5

***** EXAM 1*****

Bone; Skeletal Tissue

ch. 6

Skeleton I

ch. 7

Skeleton II; Joints

ch. 7-8

***** EXAM 2*****

Muscles I

ch. 9-10

Muscles II

ch. 10

Muscles III

ch. 10

***** EXAM 3*****

Neurons & Nerve Function

ch. 11

Central Nervous System

ch. 12

Peripheral Nerves

ch. 13

Autonomic Nerves, Neural Integration

ch. 14, 15

***** EXAM 4 *****

Special Senses I, II

ch 16

Special Senses III, review

ch. 16

*****FINAL EXAM (partly cumulative)*****

Place: 311 Proctor Hall East

SCHEDULE (subject to change):

<u>topic</u>	<u>manual exercises</u>
Labs 1 &2: Bones , Cranium & AxialSkeleton Appendicular Skeleton;	9-10, handout 10-11, handout, D1
Labs 3 & 4: PRACTICAL 1, Skin Cats Muscles I: Tissues; Trunk, Neck & Shoulder Muscles II: Shoulder & Forelimb	14, 15, D1 15 , D1 <i>(D= Dissection exercises near end of book)</i>
Labs 5 & 6: Muscles III: Hindlimb PRACTICAL 2, Digestive & Respiratory Systems	15 D6-D7
Labs 7 & 8: Endocrine & Circulatory Systems (Central) Nervous System	D3-D4 , handout 19, 21 (D2), handout
Labs 9 & 10: Anatomy of Special Sense Organs PRACTICAL 3	24-26 (parts)

Materials needed in lab: lab manual, dissecting kit, (colored) pens or pencils, rubber/vinyl gloves, some sort of covering for clothing. A lab coat is not necessary but a covering is recommended so that clothes are not inadvertently damaged.

STUDENT INFORMATION

Please complete the following information and give to your instructor. *This information will be kept strictly*

