

<p style="text-align: center;">Biology 121 – Human Anatomy and Physiology I Course Syllabus Fall 2005</p>
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Faculty Information: Dr. Nitya Jacob, *Office:* Room 104, Pierce Hall; *Phone:* 770-784-8346
Office Hours: T 3:30-4:30PM, Th 9:30-10:30 PM. If you are unable to meet me during office hours, please contact me for an appointment.
Email: njacob@learnlink.emory.edu

Lecture: MWF 11:45AM - 12:35PM, Room 101, Pierce Hall

Laboratory: Monday 2:00-5:00 PM, Room 123, Pierce Hall

Required Textbooks:

- 1) *Anatomy and Physiology*, by F. H. Martini. 2005. First Edition. Benjamin/Cummings Publishing Co., Inc.
- 2) Lab Text: *Human Anatomy and Physiology Lab Manual*, Cat version, by Elaine N. Marieb. 2005. Eighth edition. Benjamin/Cummings Publishing Co., Inc.

Required lab tools: Dissection Kit. Available in the bookstore. Kits need to be purchased before the first day of lab.

Recommended Lab Supplement: *A Guide to Anatomy and Physiology Lab* by T. G. Rust. Southwest Educational Ent.

Course objectives: Biology 121 will teach you about the physical characteristics (anatomy) of the human body and the chemical mechanisms (physiology) that allow these physical parts to function properly. Biology 121 is the first course of a two-part series exploring the eleven organ systems of the human body. In Biology 121, we will first cover the general features of biological systems, in the context of the human body. The remainder of the course will examine the structures and physiological actions of the integumentary, skeletal, muscular, and nervous systems. Other organ systems will be explored in Biology 122 in the Spring semester. For the body to function as a whole, the smallest units – cells and tissues – must work together within each organ system. Therefore each organ system will be examined on both macroscopic and microscopic levels. You will be expected to learn anatomical terminology at all levels of organization (cell, tissues, organs) and to identify structures on specimens in the laboratory. While you are learning about normal human body function, you will be able to understand the basis of various human diseases. Throughout this course, you will learn about the biological condition of homeostasis and its vital importance to normal function of the human body. You will be encouraged to think critically about the information that you learn in this course. The course aims to make you familiar with practical situations in the health field.

Biology 121 - Fall 2005 Lecture Schedule
Dr. Nitya Jacob

Date	Topic	Assigned Reading
W, Aug 31	Introduction	
	Organization of the human body	Ch. 1
F, Sep 2	Homeostasis and body function	Ch. 1
M, Sep 5	LABOR DAY - no class	
W, Sep. 7	Chemical molecules in the body	Ch. 2: 20-27; 30-43
F, Sep 9	Basic cell structure	Ch. 3: 48-64
M, Sep 12	Cell duplication and cancer	Handout
W, Sep 14	Transport of molecules	Ch. 3: 68-75
F, Sep 16	Epithelial tissue and glands (Article # 1 is due)	Ch. 4: 83-93
M, Sep 19	Connective tissue and membranes	Ch. 4: 94-105
W, Sep 21	Integument- epidermis and dermis	Ch. 5: 111-118
THURS, Sep 22	EXAM I - 8:00-9:30 AM	(Chs 1-4)
F, Sep 23	Integument -other structures, injury	Ch. 5: 119-126
M, Sep 26	Bones - structure and histology	Ch. 6: 128-135
W, Sep 28	Bones - development, growth, repair	Ch. 6: 136-146
F, Sep 30	Bones - calcium regulation	Ch. 6: 142-146
M, Oct 3	Axial skeleton - Skull	Ch. 7: 148-164
W, Oct 5	Axial Skeleton - vertebral column	Ch. 7: 164-171
F, Oct 7	Axial Skeleton - thoracic cage	Ch. 7: 171-173
M, Oct 10	FALL BREAK - no class	
W, Oct 12	Appendicular Skeleton - upper limbs (Article # 2 is due)	Ch. 7: 173-178
F, Oct 14	Appendicular Skeleton - lower limbs	Ch. 7: 179-187
M, Oct 17	Types of joints and motion	Ch. 8: 189-193
W, Oct 19	Articulations and movement	Ch. 8: 194-206
F, Oct 21	Skeletal muscle tissue structure	Ch. 9: 210-217
	Cardiac and smooth muscle tissues	Ch. 9: 236-239
M, Oct 24	Skeletal muscle contraction mechanism	Ch. 9: 217-230
TUES, Oct 25	EXAM II - 8:00-9:30 AM	(Chapters 5-8)
W, Oct. 26	Tension production and energy	Ch. 9: 222-236
F, Oct 28	Muscle fiber arrangements and action	Ch. 10: 241-247

Biology 121 – Fall 2005 Lecture Schedule (continued)

Date	Topic	Assigned Reading
M, Oct 31	Nerve tissue and neurons	Ch. 11: 284-293
W, Nov 2	Membrane channels and potentials	Ch. 11: 296-302
F, Nov 4	Action potential (Case study # 1 is due)	Ch. 11: 303-315
M, Nov 7	Spinal cord and spinal nerves	Ch. 12: 317-330
W, Nov 9	Reflexes	Ch. 12: 331-340
Thurs, Nov 10	EXAM III – 8:00-9:30 AM	(Chapters 9-11)
F, Nov 11	Brain – organization and structures	Ch 13: 342-349
M, Nov 14	Brain – medulla oblongata and pons	Ch. 13: 349-350
W, Nov 16	Brain – diencephalon, mesencephalon	Ch. 13: 352-357
F, Nov 18	Brain – cerebrum and cerebellum	Ch. 13: 357-365; 350-352
M, Nov 21	Neural disorders	
W, Nov. 23	THANKSGIVING BREAK – no class	
F, Nov 25	THANKSGIVING BREAK – no class	
M, Nov 28	Special senses – receptors, olfaction and taste	Ch. 14: 372-378 Ch. 15: 410-414
W, Nov 30	Special senses –vision	Ch. 15: 414-423
F, Dec 2	Special senses – hearing and balance (Case study # 2 is due)	Ch. 15: 429-440
M, Dec 5	Autonomic nervous system	Ch. 14: 387-398
W, Dec 7	Autonomic nervous system	Ch. 14: 387-398
F, Dec 9	Neural disorders	
M, Dec 12	Body systems – working together	
Friday, Dec 16	**FINAL EXAMINATION**	2:00 – 5:00 PM

Syllabus continues on next page

Biology 121 - Laboratory Schedule, Fall 2005
Dr. Nitya Jacob

<u>Date</u>	<u>Topic</u>	<u>Lab Exercise/Reading</u>
Sep 5	LABOR DAY	No lab
Sep 12	Getting comfortable with anatomy, Using microscopes, <i>Dissection kit required</i>	Exercises 1, 2, 3
Sep 19	Cells and cellular transport	Exercises 4, 5A
Sep 26	Tissues and integumentary system	Exercises 6A, 7, 8
Oct 3	LAB PRACTICAL EXAM I	(covers labs 1-3)
Oct 10	FALL BREAK	No lab
Oct 17	Osseous tissue and bones, Axial skeleton, Medical imaging	Exercises 9, 10
Oct 24	Appendicular skeleton, Articulations, <i>Dissection kit required</i>	Exercises 11, 12, 13
Oct 31	Muscles - gross anatomy <i>Dissection kit required</i>	Exercises 14, 15 Dissection Ex 1 (pg 751)
Nov 7	Muscles - gross anatomy <i>Dissection kit required</i>	Exercises 14, 15 Dissection Ex 1 (pg 751)
Nov 14	LAB PRACTICAL EXAM II	(covers labs 4-7)
Nov 21	Brain and cranial nerves <i>Dissection kit required</i>	Exercises 17, 19, 21
Nov 28	Sensory reception, olfaction, taste <i>Dissection kit required</i>	Exercises 22, 23, 26
Dec 5	Vision, hearing, equilibrium <i>Dissection kit required</i>	Exercises 24, 25
Dec 12	LAB PRACTICAL EXAM III	(covers labs 8-10)

******Please bring all texts (Martini, Marieb and Rust) to the laboratory. We will use them for photographs and illustrations while observing specimens.******

Camera phones and digital cameras are not permitted in the laboratory.

EXPECTATIONS, EVALUATION CRITERIA AND SUCCESS TIPS FOR 121

Honor Code: Regulations of the Honor Code apply to all work for credit in this course, including lecture and lab examinations. Please pledge all of your work with your signature to indicate that you have followed the rules of the Honor Code.

Attendance: Attached to this syllabus is the Biology Department Absence Policy. Please read through this handout carefully for conditions on absences in lecture and lab. Unexcused absences, tardiness or a failure to follow the procedures outlined in the handout will result in a reduction in your grade. Any questions about absences should be raised immediately. It is your responsibility to be aware of the policy.

Cell phones: Cell phones must be turned off during lecture. Cell phones are not permitted in the lab or during lecture and laboratory exams.

Evaluation Methods:

Lecture Exams - There will be three lecture exams, each worth 100 points, held on the dates specified in the syllabus. Lecture exams cover the topics indicated, which include textbook readings, lecture notes and concepts learned in lab. The final exam is cumulative.

Laboratory Practical Exams - Three lab practical exams, each worth 50 points, will be held on the dates specified in the syllabus. Lab exams will cover the material learned in the laboratory.

Written Assignments - There are 4 writing assignments for this course - 2 articles and 2 case studies. In the first part of the semester, you need to find 2 articles from scholarly publications, such as the *American Journal of Nursing*. For the second half of the semester, you will be given 2 case studies for analysis. Each assignment is worth 10 points. The due dates for these assignments are indicated in the lecture schedule. More details will be provided when the assignment is given.

Class Participation: You will be evaluated on your engagement in the classroom and laboratory. Please pay attention during lecture and write down questions that come up in your mind. Be active in the classroom by asking and responding to questions. Health issues are a common concern and I would like to encourage your curiosity about these topics.

Dissection: Since this is an anatomy course, lab exercises will involve dissection of preserved specimens. Extensive dissection of cats will be performed to study the muscular system. Sheep brains and eyes will be dissected to study the nervous system. Each student will be expected to participate in the dissections. This course is not ideal for persons that are uncomfortable with performing dissections.

LearnLink Class Conference: A class conference labeled “Jacob 121/122” has been set up for this course on LearnLink. Please use the conference regularly to communicate with each other and to ask questions. I will use this conference to correspond with you about items we may have missed in class. The syllabus and weekly lab instructions will also be posted under the Biology 121/122 conference – check the folders. It is a good idea to place the conference on your desktop for easy reference.

Tips for Success in Biology 121: This is an intensive course. Thorough preparation is required for excellent performance in this course.

Lecture Exam Preparation – Your preparation for lecture examinations must begin on the first day of class. Lecture exams cover many topics and large amount of information. Here are some suggestions to help you perform well on the lecture examinations:

- ✦ Read the chapter reading assignments PRIOR to lecture. Even skimming the pages will help you. Be sure to pay attention to figures in the chapter.
- ✦ Bring your textbook to class everyday. Circle the important structures or terminology in the figures during lecture.
- ✦ Pay close attention and take good notes. Try to learn as much as you can during lecture. Ask questions in class.
- ✦ Every weekend, review the material covered in class that week. Try to answer the questions at the back of each chapter to test your knowledge.
- ✦ Form a study group for weekly reviews.
- ✦ Do not postpone your studying to just prior to the exam. Last minute preparation does not work for this course. Even one week before the exam is too close.
- ✦ Take advantage of my office hours. Come by to review or clarify material on a regular basis.

Lab Exam Preparation – The laboratory component is equally important. Here are some suggestions for lab preparation:

- ✦ Read the lab outline and the assigned pages in your lab manual BEFORE you come to the lab. Lab outlines are posted on the Learnlink conference.
- ✦ Bring your textbook, lab manual, and your Rust guide to the lab. Although the Rust guide is optional, it is a valuable resource for lab.
- ✦ While in lab, try to learn as much as you can. Make close observations and take notes. Don't be in a hurry to finish.
- ✦ Return to the laboratory every week. Set aside about 1-2 hours per week to review that week's lab one more time. Repeated observations of the specimens will aid you in learning the material thoroughly for the lab exams. After the normal schedule lab period on Monday, the lab is accessible on Tuesday, Thursday, and Friday from 9AM-5PM. You are free to return to the lab to review material on these days.
- ✦ Take advantage of open lab. Rebecca Hays, your lab TA, will be available to answer questions on the scheduled open lab evenings preceding a lab exam.

Evaluation Points: The point distribution given below will be used to evaluate your performance in Biology 121.

Lecture Exams (3)	300 points
Lab Practical Exams (3)	150 points
Writing assignments (4)	40 points
Class Participation	20 points
Final Exam	150 points
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Total	660 points

Your letter grade will be determined on the standard scale of:

90-100 %	A
80-89 %	B
70-79 %	C
60-69 %	D
<60	F

Plus and minus grades will be given.

Reminder: A minimum grade of C- in this course is required for pre-nursing students.