

**NATURAL SCIENCES DEPARTMENT
HOSTOS COMMUNITY COLLEGE
OF THE CITY UNIVERSITY OF NEW YORK**

ANATOMY & PHYSIOLOGY I (BIO 230) SYLLABUS

4 credits. 3-hr. lecture/3-hr. lab (formerly BIO 3906/3909)

(Matched to 3rd edition of Martini textbook & Amerman lab manual, beginning with F'17 semester)

Meets:	
Email:	
Office hours:	
Phone:	
Contact Policy:	

COURSE DESCRIPTION:

The student will demonstrate knowledge of basic chemistry, body fluids, and the structure and function of the cell. The student will also list and describe the four kinds of animal tissue; list major bones and their function; and describe structure and function of the muscular and circulatory systems.

COURSE OBJECTIVES:

By the end of the course, students will:

- 1. Interpret scientific observations and delineate conclusions.**
- 2. Comprehend and learn from texts and lectures, take notes, analyze and synthesize the material, and respond with informed questions/reports.**
- 3. Locate, evaluate, and use information in a variety of formats and organize, analyze, evaluate, treat critically and present that information in a cohesive and logical fashion.**
- 4. Acquire important knowledge and information for life-long learning.**
- 5. Learn experimental techniques and laboratory skills such as microscopy and dissection.**
- 6. Enhance their writing ability and critical thinking skills by preparing lab reports.**

Co-requisites: *ENG 91, ESL 91 or ESL 35; MAT 20*

Required BOOKS & SOFTWARE

You will need:

- (1) the Martini textbook, third edition,
- (2) the Mastering A&P software that accompanies the Martini textbook, and
- (3) the Amerman lab manual, also the third edition. Keep in mind that you will be using these books for TWO courses—BIO 230 & BIO 240—so the cost is distributed over 2 semesters.

WHERE & HOW TO BUY:	(A) Buy via Akademos: Textbook, Mastering A&P, & Lab manual must be 3rd ed. (see below). https://hostos.textbookx.com/institutional/index.php?action=browse#save_course (B) Buy directly from publishers (see below). (C) Buy new/used or Rent from Amazon, Barnes & Noble, etc.; greater risk of getting wrong/defective item or non-working software.
TEXTBOOK & “MASTERING A&P” SOFTWARE:	<u>VISUAL ANATOMY & PHYSIOLOGY</u>, Books a la Carte Plus MasteringA&P with eText -- Access Card Package, 3rd ed., by Fredric H. Martini, William C. Ober, Judi L. Nath, Edwin F. Bartholomew, Kevin Petti. Published by Pearson Education Inc., 2017. www.pearsonhighered.com. ISBN: 9780134499680.
LABORATORY MANUAL:	<u>EXPLORING ANATOMY & PHYSIOLOGY IN THE LABORATORY</u>, 3rd ed. by Erin C. Amerman, Morton Publishing Company, 2017. http://www.morton-pub.com. ISBN: 9781617316203.

Grade Components:

Lecture 75%:

Laboratory 25%:

Total Grade for Course 100%

You must take both the lecture and laboratory final exams in order to pass the course. Failure to take one or both of the final exams will result in an INC or an F. If you get an INC you must take a “makeup” exam before the deadline or the INC will be changed to an F. You must label the diagrams and answer the questions in you laboratory manual for each laboratory exercise that we do in class.

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The grade of Incomplete (INC) is given in regular courses upon request of the student for personal emergencies that are verifiable. The faculty member has the responsibility to provide INC grade only to those students *who are passing the course*. The student has the responsibility to take the initiative in completing the work, and is expected to make up the incomplete during the first semester in residence after receiving the grade of Incomplete. *If the student does not make up the incomplete during the following semester after receiving it, an F grade may be given by the faculty member without further consultation with the student.* If after the end of the first semester the ‘Incomplete’ grade remains on the record it will be designated as an F and will be computed in the student's GPA.

Grade	GPA Value	Grade	GPA Value
A	93-100%	4	
A ⁻	90-92%	3.7	
B ⁺	87-89%	3.3	
B	83-86%	3	
B ⁻	80-82%	2.7	
		C ⁺	77-79%
			2.3
		C	70-76%
			2
		D	60-69%
			1
		F	below 60%
			0
		There is no R grade in this course.	

LECTURE SCHEDULE

Read your textbook assignments BEFORE each lecture. The laboratory schedule will generally closely match the lecture schedule. Modifications to the syllabus will be announced as the semester progresses—in class, via email and/or Blackboard announcement--so it is important that you come to class and check emails/Blackboard.

Week	Lecture Topic <i>Textbook: <u>Visual Anatomy & Physiology, 3rd ed., Martini et al., 2017</u></i>	Text Chapter	Text pages 3rd ed.	Text pages 2nd ed.
1	Orientation Introduction to Human Anatomy & Physiology	1	2-49	2-41
2	Chemical Level of Organization	2	50-93	42-85
3	Cellular Level of Organization: Organelles & Cell Cycle	3	94-108; 129-141	87-100; 121-128
4	Cellular Level of Organization: Nucleus & Diffusion/Osmosis	3	109-128	101-120
5	Tissue Level of Organization	4	142-181	134-173
6	Integumentary System	5	182-209	174-201
7	Bone (Osseous) Tissue and Bone Structure	6	210-239	202-231
8	The Skeleton (Bones) Articulations (Joints)	7 8	240-287 288-313	232-279 280-305
9	Skeletal Muscle Tissue	9	314-349	306-341
10	The Muscular System	10	350-401	342-393
11	Blood	17	630-657	622-649
12	Heart and Cardiovascular Function	18	658-695	684-739
13	Blood Vessels	19	696-749	650-683
14	Lymphatic System & Immunity	20	750-795	740-785

Week	Laboratory Manual Topic <i>Exploring Anatomy & Physiology in the Laboratory,</i> 3rd ed., Amerman, 2017	Unit	Lab Manual Pages
1	Lab Orientation (Introduction to Anatomical Terms)* Chemistry 1: Atomic Structure <i>*Unit 1 (Anat. Terms) may be covered during several lab periods.</i>	1 2, <i>handout</i>	1-36; 38-42
2	Chemistry 2: Electrolytes & pH	2 <i>handout</i>	43-44
3	Introduction to the Microscope	3 <i>handout</i>	59-68
4	Cytology: Organelles & Cell Structure Mitosis & the Cell Cycle	4 <i>handout</i>	69-80 88-96
5	Diffusion, Osmosis, & Tonicity	4 <i>handout</i>	81-87
6	Histology 1: Epithelial & Muscle Tissues	5	97-110 121-124
7	Histology 2: Connective and Nervous Tissues Integumentary System	5 6	111-120, 125-130 133-152
8	Skeletal System 1: Bone Tissues & Structure	7	153-172
9	Skeletal System 2: The Skeleton Articulations (Joints)	8 9	173-224 225-252
10	Muscle Tissue Muscular System	11 10	289-312 253-288
11	Blood	20	529-552
12	Cardiovascular System 1: Heart <i>Dissection: Sheep Heart</i>	17	445-468
13	Cardiovascular System 2: Blood Vessel Anatomy Physiology: Pulse Rate and Blood Pressure	18 19	469-504 505-528
14	Lymphatic System <i>[Demonstration Dissection: Fetal Pig (Cardiovascular)]</i>	21	553-578

Academic Integrity:

Hostos Community College believes that developing student's abilities to think through issues and problems by themselves is central to the educational process. Since the Hostos College degree signifies that the student knows the material s/he has studied, and the practice of academic dishonesty results in grades or scores that do not reflect how much or how well the student has learned, understood, or mastered the material, the College will investigate any form of academic dishonesty brought to its attention. If the charge of academic dishonesty is proved, the College will impose sanctions. The three most common forms of academic dishonesty are cheating, plagiarism, and bribery. In the collegiate setting, cheating is defined as the purposeful misrepresentation of another's work as one's own. Faculty and students alike are responsible for upholding the integrity of this institution by not participating either directly or indirectly in act of cheating and by discouraging others from doing so. Plagiarism is a form of cheating which occurs when persons, even if unintentionally, fail to acknowledge appropriately the sources for the ideas, language, concepts, inventions, etc. referred to in their own work. Thus, any attempt to claim another's intellectual or artistic work as one's own constitutes an act of plagiarism. In the collegiate setting, bribery involves the offering, promising, or giving of items of value, such as money or gifts, to a person in a position of authority, such as a teacher, administrator, or staff member, so as to influence his/her judgment or conduct in favor of the student. The offering of sexual favors in exchange for a grade, test score, or other academic favor, shall be considered attempted bribery. The matter of sexual favors, either requested or offered, in exchange for a grade, test score or other academic favor, shall also be handled as per the Sexual Harassment procedures of the College.

If you are suspected of plagiarism or cheating or if you attempt to bribe or influence your professor, you will be immediately reported to the college's Academic Integrity Officer. You will be unable to drop the class. The penalties range from an F with a score of 0 for an assignment to Failure for the entire term to expulsion from The City University of New York.

Attendance:

No student under any circumstances will be given a passing grade in this Biology course without taking and passing the laboratory. Four (4) unexcused absences to lab are equivalent to an F. Students will NOT be given a passing grade if they are "excessively" absent.

Hostos College-wide Policy on Attendance:

Students are expected to attend all class meeting in the courses for which they are registered. Classes begin at the times indicated in the official schedule of classes. Arrival in class after the scheduled starting time constitutes lateness.

The maximum number of absences is limited to 15% of the number of scheduled class hours per semester and a student absent more than the indicated 15% is deemed excessively absent.

Attendance is monitored from the first official day of classes. In the case of excessive absences or lateness, the instructor has the right to lower the grade, assign a failing grade, or assign additional written work or readings.

Absences due to late registration, change of program, or extenuating circumstances will be considered on an individual basis by the instructor. Each department and program may specify in writing a different attendance policy. Instructors are required to keep an official record of student attendance and inform each class of the College's or department attendance policy.

Instructor's Lateness:

Students are expected to wait for the Instructor unless or until notified otherwise by a designated representative from the Natural Sciences Department.

Disability:

If any student has a disability that requires course accommodations, please talk to me in person, or contact me by phone or email, as soon as possible to discuss your situation. I will be pleased to meet with you to discuss the matter as well. If you have not already done so, you should register with the college's office of **Accessibility Resource Center (ARC)** located in the **Savoy building in Room D101-L**; telephone: **718-518-4454**. The office will assess your eligibility for services and / or accommodations and will work with you to plan and implement appropriate accommodations to assist you to complete requirements for this and other courses.

HOW TO SUCCEED IN A&P WITHOUT REALLY TRYING (TOO HARD)

(also see Martini 3rd ed. textbook, p.11 (2nd ed = p.3)

You are engaged in a serious activity—learning about the human body in health and disease. You have a serious and worthwhile goal in mind—becoming a health-care professional. Therefore you should approach the course with a serious and professional attitude.

The course is difficult and it is important for you to come prepared with the proper supplies (textbook, notebook, pens/pencils), with adequate attention to your body (sleep and food), and with adequate study/mental preparation for the material. Although there is no one proper way to study, I offer the following suggestions, which every student would do well to follow in order to improve their chances of getting a better grade:

A. Attendance: In my experience, the best students almost always have the best attendance. So do not miss class, and come on time—not late. Sit down and get ready for the class.

B. Preview: Spend 15-30 minutes before class to skim the upcoming material: (a) Lecture: look over the upcoming pages in the lecture handout and at the matching textbook pages and chapter outline/headings before each lecture. (b) Lab: look over the subject matter that we will cover, especially the diagrams in the lab manual, before each lab.

C. Active Listening & Note-taking: While you are in class, listen carefully and pay attention to what I say, write on the board, or show on the projector. Think about the lecture material, and take good notes. Active thinking and note-taking promote ‘active learning’, which will help you to understand and absorb the material better

D. Review: After class (preferably within 12 hours), go over your class notes, the lecture handout, and/or the lab manual, and look inside the textbook to find and read several pages that match the lecture or lab material.

E. Additional Review & Memorization: Keep reviewing the material one or more times each week, and begin the *memorization* process—storing in your memory the information that you will need for the exam.

F. Active Study: As emphasized above, do not study by just reading the material passively. Always try to engage in ‘active learning’ by stopping constantly to think about the material, to explain it to yourself (or to others). If you cannot explain something, it means that you do not really understand it. Get involved!

G. ‘Self-Testing’: Test yourself to make sure you know the material. When you study, stop every 15-20 minutes and test yourself—can you explain the process, do you know the definitions, can you list the parts (e.g., bones, organs, etc.). Use charts or study cards to help in your self-testing. Or find a family member, friend, or fellow student to test you. Get them involved too!

H. Study Groups & Study Rooms: Group studying (with up to 3 of your classmates) is a powerful way to improve your understanding and retention of the material. Get the other students’ phone numbers and arrange to study ‘live’ or over the phone for 1-2 hours a week. Study rooms are available in the library that can be reserved by several students.

I. Tutoring in the Hostos Academic Learning Center (HALC): Every student is eligible to get free tutoring at HALC, which is offered on a one-on-one or small group basis, and provides general course review and pre-exam preparation in all subjects offered at Hostos. Anatomy & Physiology tutoring is available on a walk-in basis in room C-596-F. There is no need to make an appointment, but please check HALC webpage for schedule: www.hostos.cuny.edu/HALC/tutoring/Default.aspx.

J. Make a Study Schedule & Stick to It: You cannot learn a month of science in one weekend. Cramming doesn’t work, so start now, create a study schedule, and start studying now!! ***Good luck and have a happy, healthy semester !!***

HOW TO PREPARE FOR EACH LECTURE OR LAB CLASS

- (1) Pay attention to your body by getting enough sleep and eating properly.
- (2) Be on time for every lecture or lab class during the semester.
- (3) Sit down and get ready for the class upon arriving at the lecture or lab room.
- (4) By this time you should have a fairly good idea of what will be covered that day because you previewed that day’s class materials by looking at the syllabus, your notes from the previous class, and the lecture outline.
- (5) If you have lab, you have already completed the lab homework due that day.
- (6) You are adequately prepared with the necessary supplies: textbook and/or lab manual chapters, lab homework, your A&P notebook, pens, pencils, markers, etc.
- (7) Congratulations! You are now prepared to focus on the class material and actively learn!!

HOW MANY HOURS SHOULD YOU STUDY EVERY WEEK?

Generally, the rule of thumb is that you should study approximately 2 hours for every one hour of classroom time. For example, if you spend 4 hours a week in a particular class, then you should spend 8 hours studying and doing homework. However, this rule doesn't apply to every class. And some classes are going to be easier for you than others — so here is a quick formula to help you determine the amount of time you should study each week:

Easy Class: If you're in an easy class — and studying something that you're somewhat familiar with — you could probably get away with studying 1 to 2 hours per class hour. You may even study less.

Not-So Easy (or Difficult) Class: If your class is not so easy, or if it is difficult for you— you'll probably want to spend anywhere from 2-3 hours or even as much as 4 hours studying for every hour spent in class. If more hours are needed, take away hours from time spent studying in your easier courses.

HOW TO SUCCEED IN THE SCIENCES

Succeeding in science requires more than memorization. Materials for most science courses are organized in a similar way: Generally, the professor gives an outline, the outline is supplemented by your text, and your textbook is supplemented by class lecture. Following are steps that will help you to learn the material, create a comprehensive study guide, achieve better test results, and succeed in the sciences.

A. Read professor's outline to introduce yourself to new terminology.

B. Read textbook chapter as follows:

1. Read introduction.
2. Read summary.
3. Skim chapter.
4. Read entire chapter from start to finish.
5. Work problems/quizzes - check answers in book or in solutions manual.

The introduction and summary of a chapter act like starting points and destinations on a road map. New terminology (*landmarks*) is generally signaled, and you will note these new terms as you "skim" a chapter. By the time you read the entire chapter, you will have already seen the new terms two, three, or four times! The terms will seem familiar, so you won't need to continually "go back" to the previous paragraph to re-read definitions.

C. Create notes using Cornell method:

This is a superb note taking method because it provides a comprehensive study guide that combines your professor's outline, your text notes, and your lecture notes. Use your professor's outline and your text, outline main concepts of the chapter materials. Put terms on left 1/3 of page; descriptions on right. Leave large, blank spaces between each concept. You will fill in spaces with material provided in class lectures.

D. Re-read your notes after you have written them.

E. Add class notes to your study guide:

Supplement home notes with class notes; leave blanks when you miss something and fill it in soon after class. Place a check beside notes that the professor reviews - two checks, if mentioned more than once - to show the concepts you should know. Write all examples from board. Write a summary at bottom of each page. Reread notes after class, and before you start the next chapter. Review all notes before you start a new chapter.

F. Get peer tutoring if you don't understand. Use other resources to help memory:

Drill problems & solutions; tape & listen to your notes; use concept cards; create questions and answers.

G. Form a study group of 3 to 5 people for test preparation:

Each person takes one portion/chapter of covered material and creates a mini-test on that section, leaving blank spaces for answers. He/She then makes copies of the test for each member of the group. The tests are reviewed together and answers are written in. Confusion can be cleared up by checking with a tutor. Your group should start reviewing at least one week prior to the exam. Do not cram at the last minute; you will only become confused. Short, frequent reviews work best. (From: <https://learn.camden.rutgers.edu/worksheets-study-writing-skills>)

TIPS FOR STUDYING IN COLLEGE

The most common reason for a rough start in college is not a lack of ability; it is generally caused by poor study habits and time management. Students leave high school with a wide range of study skills, but most students go through high school without needing to study as much or as intensely as will be required in college. Different techniques work well for different students and in different disciplines. What follows are a few suggestions that may be helpful for you. Like anything else, good study skills generally require time and practice to develop. Don't get discouraged, but be persistent in your efforts.

How Much Time Should You Spend Studying?

- Study as long as it takes to master (not memorize) the material. Your objective is to study effectively and

successfully, not for a specific number of hours.

- The actual number of hours you spend studying will vary from your classmates. But, you will probably need to study far more now than you ever did in high school. For some subjects, you may spend two or three hours outside of class for each hour you spend in class.

When Should You Study?

- Studying should be an ongoing process. Study as the material is being presented, not just the last couple of days before a major test.
- It is particularly important to review your notes later on the day the lecture was given, even if the review is brief. A quick review that same day promotes the movement of material into long-term memory. More review will still be necessary, but not as much as otherwise might be the case.
- For most people, it is far more effective to study in many short sessions than to cram during long study sessions.

When you study – study. When you have fun – have fun. Don't mix the two.

The Basic Key to Success: Studying is an Active, not Passive process

- Keep a pen in your hands at all times, and use it. Write terms and concepts over and over – in your own words. Don't just look at your notes!!!
- Read your assignments actively also. Preview the material and read with objectives in mind. Write key terms, concepts, and your own questions in the margins. Don't just highlight entire pages of text.
- Use every sense possible. Examine and reproduce charts and figures; repeat concepts and terms aloud, etc.
- Remember, "One time is no time at all." Study difficult material over and over again.
- Test yourself realistically. Can you reproduce key figures and flow charts on your own? Can you explain a process to a classmate in our own words? Are your self-tests realistic? For example, can you only explain mitosis to a classmate if you just looked at the notes yourself two minutes ago?

Take Good Notes in Class

- Arrive on time & be prepared. Quickly review previous day's notes in order to orient yourself to what's ahead.
- Within reason, write down as much information as possible. Don't assume you'll remember something later.
- Don't worry about neatness in class; your notes are only for you. Don't take time to write complete sentences.
- Try taking notes in hierarchical form, where details and specifics are indented under broader concepts.
- Leave plenty of blank space to separate concepts and add notes later.

Copy / Study Your Notes Later

- Recopying and organizing your notes is a great, active study method.
- Use your own words and organization; concentrate as you make this new copy of your notes. If you can only copy over and memorize the original wording, you probably don't really understand the concepts.
- Copy your notes over neatly so that they will still make sense to you when the material is not fresh – like at test time or during finals.
- Integrate lecture notes with notes from your reading assignments. Find answers to your own questions whenever possible.
- Use flash cards for appropriate material (terms, diagrams, flow charts, etc.).
- Study independently and with classmates. It can often be beneficial to discuss concepts with a partner or have a classmate test you on your knowledge. However, it is also important to spend a certain amount of time studying and concentrating on your own. This is especially true near test time.

Tips on Overcoming Test Anxiety

- One of the best ways to overcome test anxiety is to do your best to prepare for the test. It gives you confidence before the test and peace of mind after the test – regardless of the results.
- Ideally, get plenty of rest the night before. If you plan to study late, do so two nights before the test.
- Don't talk to your classmates about the material just before the test. It may just make you nervous.

(From: <http://www.georgetowncollege.edu/bio/student-resources/study-tips/>)