

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

ANATOMY & PHYSIOLOGY I (BIO 230)

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

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

Keep in mind that you will be using these books for TWO courses—BIO 230 & BIO 240.

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| <p>TEXTBOOK & “MASTERING A&P” SOFTWARE:</p> | <p><u>VISUAL ANATOMY & PHYSIOLOGY, 2nd Ed.,</u> by Fredric H. Martini, William C. Ober, Judi L. Nath, Edwin F. Bartholomew, Kevin Petti. Buy this version: “Books a la Carte” Plus MasteringA&P with eText -- Access Card Package. Published by Pearson Education Inc., 2015. ISBN: 978-0-321-98072-4.</p> |
| <p>LABORATORY MANUAL:</p> | <p><u>EXPLORING ANATOMY & PHYSIOLOGY IN THE LABORATORY, 2nd ed.</u> by Erin C. Amerman, Morton Publishing Company, 2013. ISBN: 9781617310560.</p> |

Grade Components:

-Lecture (75%)

-Laboratory (25%)

Additional information about grades:

-Incompletes: The grade of Incomplete (I) 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. | | | |

A&P 1: SCHEDULE OF TOPICS

| LECTURE SCHEDULE | | | |
|--|--|---------------------|----------------------------|
| <i>Text: Visual Anatomy & Physiology, 2nd ed. Martini, Ober, et al., 2015</i> | | | |
| <i>Week</i> | <i>Lecture Topic</i> | <i>Text Chapter</i> | <i>Text Pages</i> |
| 1 | Orientation Introduction to Human Anatomy & Physiology | 1 | 2-41 |
| 2 | Chemical Level of Organization | 2 | 42-85 |
| 3 | Cellular Level of Organization: Organelles & Cell Cycle | 3 | 87-100; 121-128 |
| 4 | Cellular Level of Organization: Nucleus & Diffusion/Osmosis | 3 | 101-120 |
| 5 | Tissue Level of Organization | 4 | 134-173 |
| 6 | Integumentary System | 5 | 174-201 |
| 7 | Bone (Osseous) Tissue and Bone Structure | 6 | 202-231 |
| 8 | The Skeleton (Bones) Articulations (Joints) | 7 8 | 232-279 280-305 |
| 9 | Skeletal Muscle Tissue | 9 | 306-341 |
| 10 | The Muscular System | 10 | 342-393 |
| 11 | Blood | 17 | 622-649 |
| 12 | Heart and Cardiovascular Function | 19 | 684-739 |
| 13 | Blood Vessels | 18 | 650-683 |
| 14 | Lymphatic System & Immunity | 20 | 740-785 |

LABORATORY SCHEDULE

Lab Manual: Exploring Anatomy & Physiology in the Laboratory 2nd ed., Amerman, 2013

| <i>Week</i> | <i>Laboratory Topic</i> | <i>Unit</i> | <i>Lab Manual Pages</i> |
|-------------|---|-----------------------------|----------------------------------|
| 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, handout | 1-29; 34-36 43-44 |
| 2 | Chemistry 2: Electrolytes & pH | 2 handout | 32-33 37-42 |
| 3 | Introduction to the Microscope | 3 handout | 51-58 |
| 4 | Cytology: Organelles & Cell Structure Mitosis & the Cell Cycle | 4 handout | 59-70 77-80 |
| 5 | Diffusion, Osmosis, & Tonicity | 4 handout | 71-76 81-84 |
| 6 | Histology 1: Epithelial & Muscle Tissues | 5 | 85-105 |
| 7 | Histology 2: Connective and Nervous Tissues Integumentary System | 5 6 | 106-118 119-134 |
| 8 | Skeletal System 1: Bone Tissues & Structure | 7 | 135-152 |
| 9 | Skeletal System 2: The Skeleton Articulations (Joints) | 8 9 | 153-200 201-222 |
| 10 | Muscle Tissue Muscular System | 10 11 | 223-248 249-280 |
| 11 | Blood | 19 | 463-486 |
| 12 | Cardiovascular System 1: Heart <i>Dissection: Sheep Heart</i> | 16 | 385-410 |
| 13 | Cardiovascular System 2: Blood Vessel Anatomy Physiology: Pulse Rate and Blood Pressure | 17 18 | 411-442 443-462 |
| 14 | Lymphatic System <i>Optional Demonstration Dissection: Fetal Pig (Cardiovascular System)</i> | 20 | 487-502 503-507 |

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.

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.

Disability:

If any student has a disability that requires course accommodations, please talk to the teacher, or contact them by phone or email, as soon as possible to discuss your situation. 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 textbook, 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, the following suggestions will help students 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 will be covered, 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 the teacher says, writes on the board, or shows 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, and look inside the textbook and lab manual 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: 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.

I. Tutoring (in the Tutoring Center: HALC): Every student is eligible to get free tutoring at HALC (Hostos Academic Learning Center). HALC tutoring starts the second or third week of the regular semester, and is open 7 days a week. Tutoring is one-on-one or in small groups, and provides general course review and pre-exam preparation in all subjects offered at Hostos. Anatomy & Physiology, and Biology 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 the times of A&P tutoring: <http://www.hostos.cuny.edu/HALC/tutoring/Default.aspx> . E-tutoring is also available—check the HALC website for further details.

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 !!*