DEPARTMENT OF BIOLOGY
MEDGAR EVERS COLLEGE of the CITY UNIVERSITY OF NEW YORK

SYLLABUS
BIO 251 *** ANATOMY AND PHYSIOLOGY 1

TEXTBOOKS:

1. Lecture Textbook: Anatomy & Physiology, 7th Edition, by R.R. Seeley, T.D. Stephens, P. Tate; Publishers: McGraw-Hill Higher Education, New York.
2. Laboratory Textbook: Eric Wise Laboratory Manual Anatomy & Physiology, 7th Edition, by R.R. Seeley, T.D. Stephens, P. Tate; Publishers: McGraw-Hill Higher Education, Publishers: McGraw-Hill Higher Education, New York.

COURSE DESCRIPTION

A human anatomy and physiology course dealing with the fundamentals of cellular physiology, morphology and function of the major organ systems including the muscular, skeletal, and integumentary systems.

COURSE REQUIREMENTS:

Attendance to class and labs is very important and will be monitored closely. Any student who is absent from a class meeting is responsible for all announcements made by the professor including test dates. Students should make every effort to be in class on time, listen attentively, take notes, study the textbook and ask questions when necessary. Students are encouraged to see their professor in the event that they have problems that need attention. In addition to the office hours, your professor may, on request, be available for conferences before or after class. Every student registered for BIO 251 must make sure that he/she is attending the right class/lab section.

The course carries 4 credits and meets for 6 hours a week (3 hour for the lecture and 3 hours for the lab). There will be at least three hourly tests given by individual instructors during the semester. There will also be a uniform mid-term exam for all sections and a uniform final exam at the end of the semester for both the lecture and the lab components of the course. **THERE WILL BE NO MAKE-UP EXAMS FOR THE UNIFORM MID-TERM AND UNIFORM FINAL EXAMS.**

GRADING:

The lecture component of the course will account for 60% of the final grade distributed as follows:

3 hourly exams given by individual instructors:	25%
Uniform mid-term exam:	15%
Uniform final exam:	20%
Total:	60%

The lab component of the course will account for 40% of the final grade distributed as follows:

Mid-term:	10% for class practical exams given by individual instructors
	10% for uniform departmental exam
Final:	10% for class practical exams given by individual instructors
	10% for uniform department exam
Total	40% + 60% (above) = 100%

The marks for the lecture and the lab will be added up to determine the final mark a student earns in the course. A letter grade will be assigned to BIO 251 and a “P” or “F” will be assigned to BIOL 251. If a student earns an “F” grade for BIO 251, that student automatically will get an “F” grade for BIOL 251.

BIO 251 LECTURE SCHEDULE

TOPIC	CHAPTER
The Human Organism An introduction to the structure and functional organization of the human organism, homeostasis, terminology of the body plan; planes, body cavities and serous membranes. *This should include important clinical terminology, an explanation of these terminologies as well as relating their meanings to the origin of the words (etymology).*	1
The Chemical Basis of Life *Emphasis should be placed on Basic Chemistry; Chemical Reactions and Energy*; *Inorganic Chemistry (water, solution concentrations; acids and bases; oxygen; carbon dioxide); Organic Chemistry (carbohydrates, lipids, proteins, nucleic acids (DNA/RNA); and, adenine triphosphate (ATP).*	2
Structure and Function of the Cell *Emphasis should be on the following:* *Functions of the cell (Table 3.1); How we see cells; plasa membrane; membrane lipids; membrane proteins; movement through the plasma membrane (osmosis and diffusion); filtration; endocytosis and exocytosis; organelles; cell cycle; protein synthesis; mitosis;* meiosis	3
Histology: The Study of Tissues *Emphasis should be on the following: Tissues and histology; embryonic tissue; epithelial tissue (classification, functions; glands); connective tissue*	4
Integumentary System *The entire chapter should be studied in detail except details of hair and nails. Skin and vitamin D, glands of the skin, and blood supply to the skin should be emphasized. Where possible discuss a few of the Clinical Focus clinical disorders.*	5
MID-TERM EXAMINATION	
Blood *The entire chapter is important but special emphasis should be put on the following: functions of blood; blood cells (red and white blood cells*, *blood platelets, types of blood cells, their names, functions, and quantity (Table 19-2); blood plasma and plasma proteins; hemoglobin; sickle cell; physical characteristics of blood, formed elements, Rh and ABO systems, and hemostasis.*	19
Skeletal System: Gross Anatomy 1. Axial Skeleton *Details of the entire chapter should be emphasized. Identification of individual bones should be dealt with in the lab.* 2. Appendicular Skeleton *Details of the entire chapter should be emphasized.Identification of individual bones should be dealt with in the lab.*	6 & 7
Articulations and Movements (Joints) *Details of the entire chapter should be emphasized.* *Identification of different types of joints should be dealt with in the lab. Clinical Focus - Joint Disorders can be emphasized in the lecture.*	8

Muscular System: Histology and Physiology
Details of the entire chapter should be emphasized. 9
Comparison and explanations of the three types of muscle tissue Slding-Filament Model, etc.
Muscular System: Gross Anatomy
Most of this chapter should be discussed in the lab. Emphasis in the lecture should be 10
limited to the discussion of the basis of naming skeletal muscles as well as the origin and insertion of the following muscles: biceps, triceps, sternocleidomastoid (SCM), rectus abdominis, internal oblique, external oblique, quadriceps femoris, gluteus maximus, Hamstring group, etc.
Discuss, in general, general exterior and interior muscles; give examples; anterior/superficial muscles, muscle groups as summarized in Tables 10-1 through 10-20. Identification of individual muscles should be handled as practical as possible in the lab.

BIOL 251 LABORATORY SCHEDULE

LABORATORY MANUAL: Eric Wise Laboratory Manual Anatomy & Physiology, 7th Edition by Seeley, Stephens, and Tate.

SUPPLEMENTARY MATERIALS
1. Dissecting Kit
2. Lab coat (must wear to enter lab)
3. Lab Notebook

LABORATORY OBJECTIVES:
To provide an understanding of the structure and function of cells, tissues, and organs of the integumentary, skeletal and muscular systems. Lecture material will be re-inforced with relevant laboratory dissections and physiological experiments.

BE SURE TO ANSWER THE REVIEW QUESTIONS AT THE END OF EACH LAB EXERCISE.

LABORATORY SESSION I
Introduction: See Laboratory Guidelines (inside front cover)
Organs, Systems, and Organization of the Body Exercise 1
Microscopy Exercise 2

LABORATORY SESSION II
Cell Structure and Function - osmosis, diffusion, filtration Exercise 3

LABORATORY SESSION III
Tissues - Slides: Epithelial tissue, Muscular tissue, Nervous tissue Exercise 4

LABORATORY SESSION IV
Tissues - Slides: Connective tissue proper, Osseous tissue (bone) Exercise 4
Vascular tissue (blood), Cartilage

LABORATORY SESSION V
Integumentary System — Exercise 5

LABORATORY SESSION VI – <u>UNIFORM MIDTERM EXAM</u>

LABORATORY SESSION VII
Introduction to the Skeletal System: Axial and Appendicular Skeleton — Exercise 6

LABORATORY SESSION VIII
Appendicular Skeleton — Exercise 7

LABORATORY SESSION IX
Axial Skeleton – Vertebrae, Ribs, Sternum, Hyoid Bones — Exercise 8

LABORATORY SESSION X
Axial Skeleton – Skull — Exercise 9

LABORATORY SESSION XI
Articulations — Exercise 10

LABORATORY XII
Muscles of the Shoulders and Upper Extremity — Exercise 12

LABORATORY SESSION XIII
Muscles of the Hip, Thigh, Leg, and Foot — Exercise 13

LABORATORY SESSION XIV
Muscles of the Head and Neck — Exercise 14
Muscles of the Torso — Exercise 15

LABORATORY SESSION XV
<u>UNIFORM DEPARTMENTAL FINAL EXAM</u>