DEPARTMENT OF BIOLOGY
MEDGAR EVERS COLLEGE
CITY UNIVERSITY OF NEW YORK

BIO 152 *** ANATOMY AND PHYSIOLOGY OF HUMAN SYSTEMS II

Textbook: Anatomy and Physiology, 7th edition (2006) by Rod R. Seeley, Trent D. Stephens and Phillip Tate.

Lab Book: Laboratory Manual Anatomy & Physiology Seventh edition (2006) by Eric Wise
ISBN 0-07-255330-S
Publishers: WCB McGraw-Hill

COURSE DESCRIPTION:

BIO 152 is the last of a three semester Anatomy & Physiology course (BIO 150/151/152). This course continues the study of the 11 organ systems concentrating on the Cardiovascular, Lymphatic, Respiratory, Digestive, Urinary and Reproductive systems. In addition, human development from fertilization through the life stages of postnatal development is discussed.

COURSE REQUIREMENTS:

Prerequisite: BIO 151

Students who have successfully completed the BIO 151 lab/lecture are allowed to enroll in Bio 152. Those students registering for BIO 152 must also register for BIOL 152 which is the laboratory part of the course. The course carries 4 credits and meets six hours a week (3 hours lecture and 3 hours lab).

GRADING: The student's final grade for BIO 152 will be determined as follows:

LECTURE GRADE: …….60% of course grade
Instructor's classroom exams* 25%
Uniform departmental midterm 15%
Uniform departmental final 20%
* Besides the two departmental exams, there will be AT LEAST two lecture exams given by the instructor.

LAB GRADE: …….. 40% of course grade
Instructor's contribution towards lab grade* 20%
Departmental written lab midterm 10%
Departmental written lab final 10%
*Besides the two departmental lab exams, there will be AT LEAST two practical lab exams given by the lab instructor.

THERE WILL BE NO MAKE-UP EXAMS FOR ANY OF THE DEPARTMENTAL EXAMS. At the end of the semester, the marks for the lecture, lab and all departmental exams will be added up to determine the student's final grade for the course. A letter grade will be assigned to BIO 152 and a "P" or "F" will be assigned to BIOL 152. Students earning an "F" grade for BIO 152 will automatically be assigned an "F" grade for BIOL 152.

BIO 152 **LECTURE TOPICS**

Week	Topics	Chapters
1.	Cardiovascular System Blood : Functions of Blood, Plasma Formed Elements, red blood cell formation and red blood cell turnover, normal and abnormal hemoglobins (Hgb S), blood plasma plasma proteins; physical characteristics of blood; white blood cells and hemostasis. Blood typing and blood matching should be emphasized in the lab.	19
2	Cardiovascular System. The Heart. Functions of the Heart. Anatomy of the Heart. Coronary Circulation. Heart Chambers and Valves. Heartbeat and the Conduction System	20
3.	The Electrocardiogram. Difference between action potential in Cardiac muscle and action potential in skeletal muscle..	21
4.	Cardiovascular System, Peripheral Circulation and Regulation Functions of the Peripheral Circulation. General features of Blood Vessel Structure. Pulmonary Circulation. Systemic Circulation.	21
5.	Dynamics of Blood Circulation. Blood Pressure. Heartbeat and Cardiodynamics. Cardiac Cycle Heart rate, Stroke Volume and Cardiac Output.	21
6.	Lymphatic System and Immunity. Functions of Lymphatic System. Lymphatic Vessels and Lymphatic Tissue and Organs. Immunity. Innate Immunity (Nonspecific) and Adaptive Immunity (Specific) Antibody-Mediated Immunity. Cell-Mediated Immunity. Immune Interactions. Immunotherapy. Acquired Immunity. Effects of Aging On the Lymphatic System and Immunity.	22
7.	Respiratory System. Functions of the Respiratory System. Anatomy and Histology of the Respiratory System.Ventillation. Measuring Lung Function. Pulmonary Volumes and Capacities. Physical Principles of Gas Exchange. Oxygen and Carbon Dioxide Transport in the Blood. Rhythmic Ventilation. Modification of Ventilation.Respiratory Adaptations to Exercise. Effects of Aging On the Respiratory System.	23.
	MID –TERM EXAMINATION.	

8. Digestive System. Anatomy of the Digestive System. Functions of The Digestive System. Histology of the Digestive System. Regulation Of the Digestive System. 24.

9. Functions of the Major Sections of the Digestive System. Accessory Organs, Liver,Gallbladder and Pancreas.Digestion Of Major Foods- Carbohydrates, Proteins, Fats and Nucleic acids. 24

10. Urinary System. Functions of the Urinary System. Kidney Anatomy and Histology. Anatomy and Histology of the Ureters and Urinary bladder. Urine Production.Regulation of Urine Concentration and Volume. Clearance and Tubular Maximum. Effects of Aging on the Kidneys. 26.

11. Reproductive System. Anatomy of the Male Reproductive System. Sperm cell development. Physiology of Male Reproduction. 28.

12. Anatomy of the Female Reproductive System. Oocyte development

28

and Fertilization. Physiology of Female Reproduction. Effects of Aging on Reproductive System.

13. Development, Growth, Aging, and Genetics. Prenatal Development. Fertilization. Implantation of the Blastocyst and Development of the Placenta. Formation of Germ Layers. Development of the Organ Systems. 29

14. Growth of the Fetus. Parturition. The Newborn. Lactation. First Year After Birth. Life Stages. Aging. Death. Genetics. Genetic Disorders. Genetic Counseling.

FINAL EXAM

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LABORATORY TOPICS BIOL 152

LABORATORY SESSION 1

Blood……... EXERCISE 25 -26

LABORATORY SESSION 2

The Cardiovascular System
Structure of the Heart……..… EXERCISE 27

LABORATORY SESSION 3

Cardiovascular Sounds & Heart Rate Control…….…… EXERCISE 29

LABORATORY SESSION 4

Electrocardiogram Monitoring
Chart records & Computerized Hardware ……..EXERCISE 28

LABORATORY SESSION 5

The Arterial System ……..…..…… EXERCISE 30-31

LABORATORY SESSION 6

The Venous System and Blood Vessels and Blood Pressure ……EXERCISE 32& 34

LABORATORY SESSION 7

Functions of Vessels and The Lymphatic System… ……...EXERCISE 33

LABORATORY SESSION 8

The Respiratory System
The Respiratory Organs …….…….....EXERCISE 35

LABORATORY SESSION 9
Respiratory Function, Breathing, and ……..EXERCISE 36
Respiration

LABORATORY SESSION 10
MIDTERM EXAM - PRACTICAL & WRITTEN

LABORATORY SESSION 11

The Anatomy of the Digestive System…….…… ……...EXERCISE 38
Physiology of the Digestive System…….....EXERCISE 39

LABORATORY SESSION 12

The Anatomy of the Urinary System...……. ……EXERCISE 40
Urine: Composition & Tests

LABORATORY SESSION 13

The Male and Female Reproductive Systems……..…….…… …….EXERCISE 42-43

LABORATORY SESSION 14

FINAL EXAM - PRACTICAL & WRITTEN