

This syllabus is provided as a general informational guide. Some of the information may vary depending on the specific course section and instructor. Different sections of the same course may require different textbooks. Verify the section specific textbook information in the CUNY's Academic Course Schedule Web Page. Modifications of the grading system presented here will be communicated by the instructors of the sections when they meet the class.

BOROUGH OF MANHATTAN COMMUNITY COLLEGE

The City University of New York

Department of Science

HUMAN BIOLOGY BIO-111

Class Hours: 5

Lecture hours per week: 3

Laboratory Hours per Week: 2

Semester: Spring 2021

Instructor Information (Phone#, Office#, email) _____

Credits: 4

Course Description: Introduction to the structure and function of the human body with emphasis on both the physiological mechanisms in health and disease, as well as concepts and current issues in human biology. Topics include: the molecules of life, cells, tissues, and organ system homeostasis; the skeleton, muscles, the heart, blood, skin, the sensory mechanisms of the eye, ear, taste, touch, and perception; nervous, endocrine, respiratory systems, the brain, genetics, & the immune system, infectious diseases, cancer and nutrition.

Basic Skills ENG 88, ESL 94, ACR 94 AND MAT 51 OR MAT 41

Prerequisites: None

Corequisites: None

Course Student Learning Outcomes (Students will be able to...)	Measurements (means of assessment for student learning outcomes listed in first column)
1. Identify and apply the fundamental concepts and methods of Human Anatomy and Physiology and Microbiology.	1. Formative assessments, exams, quizzes, laboratory assignments, and evaluation of homework assignments.
2. Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.	2. Exams, case studies evaluations, oral presentations
3. Use the tools of a scientific discipline to carry out collaborative laboratory investigations.	3. Formative assessments, graded lab exercise; quizzes and examinations
4. Identify the common causative agents, occurrence and modes of transmission of the most common human diseases.	4. Quizzes and examinations
5. Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.	5. Formative assessments, exams and quizzes

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Below are the college's general education learning outcomes, the outcomes that are checked in the left-hand column indicate goals that will be covered and assessed in this course. (Check at least one.)

	General Education Learning Outcomes	Measurements (means of assessment for general education goals listed in first column)
<input type="checkbox"/>	Scientific Reasoning - students will be able to apply the concepts and methods of the natural sciences.	Students will assimilate class and laboratory information in order to answer questions related to Human Biology.

Required Text: Johnson, Michael D. 2017. Human Biology: Concepts and Current Issues, 8th Edition. Pearson/Benjamin Cummings.

Required Laboratory Manual: Igor V. Zaitsev, Mario Benavides, Shuk C. Tsoi 2017. Human Biology: A Laboratory Manual.

Other Resources

Use of Technology: Blackboard may be used at the instructor's discretion.

Class Participation

Participation in the academic activity of each course is a significant component of the learning process and plays a major role in determining overall student academic achievement. Academic activities may include, but are not limited to, attending class, submitting assignments, engaging in in-class or online activities, taking exams, and/or participating in group work. Each instructor has the right to establish their own class participation policy, and it is each student's responsibility to be familiar with and follow the participation policies for each course.

BMCC is committed to the health and well-being of all students. It is common for everyone to seek assistance at some point in their life, and there are free and confidential services on campus that can help.

Single Stop www.bmcc.cuny.edu/singlestop, room S230, 212-220-8195. If you are having problems with food or housing insecurity, finances, health insurance or anything else that might get in the way of your studies at BMCC, come by the Single Stop Office for advice and assistance. Assistance is also available through the Office of Student Affairs, S350, 212-220- 8130.

Counseling Center www.bmcc.cuny.edu/counseling, room S343, 212-220-8140. Counselors assist students in addressing psychological and adjustment issues (i.e., depression, anxiety, and relationships) and can help with stress, time management and more. Counselors are available for walk-in visits.

Office of Compliance and Diversity www.bmcc.cuny.edu/aac, room S701, 212-220-1236. BMCC is committed to promoting a diverse and inclusive learning environment free of unlawful discrimination/harassment, including sexual harassment, where all students are treated fairly. For information about BMCC's policies and resources, or to request additional assistance in this area, please visit or call the office, or email olevy@bmcc.cuny.edu, or twade@bmcc.cuny.edu. If you need immediate assistance, please contact BMCC Public safety at 212-220-8080.

Office of Accessibility www.bmcc.cuny.edu/accessibility, room N360 (accessible entrance: 77 Harrison Street), 212-220-8180. This office collaborates with students who have documented disabilities, to coordinate support services, reasonable accommodations, and programs that enable equal access to education and college life. To request an accommodation due to a documented disability, please visit or call the office.

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Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism. Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's Web site, www.bmcc.cuny.edu. For further information on integrity and behavior, please consult the college bulletin (also available online).

LECTURE

WEEK	DATE	TOPIC	PAGES IN TEXT BOOK	EXAMS
1		Exploring Life/Science: characteristics of life (homeostasis, metabolism, etc.), levels of organization, defining features of humans, scientific method.	Ch.1 (Pages: 1-20)	
2		Chemistry of Life: matter, atoms, molecules, chemical bonds, pH, inorganic and organic compounds, organic molecules of living things (carbohydrates, lipids, proteins, and nucleic acids).	Ch.2 (Pages: 21-46)	
3		Structure & Function/Cells: eukaryotic and prokaryotic cells, plasma membrane, passive and active transport, cell organelles.	Ch.3 (Pages: 47-76)	
4		Tissues, Organs and Organ Systems: epithelial, connective, muscle, and nervous tissues, organization of human body. Skin as an organ system: suntans and smoking.	Ch. 4 (Pages: 77-98)	
5		Skeletal and Muscular Systems: microscopic bone structure, human skeleton and its functions, diseases and disorders of the skeletal system; skeletal, cardiac, and smooth muscles and their functions, muscle contraction. Disorders and diseases: muscular dystrophy, atrophy, hypertrophy, muscle cramps, pulled muscles, tetanus, botulism.	Ch. 5, 6 (Pages: 99-38)	
6		Blood, Heart & Blood Vessels: functions, components of blood, human blood types. Blood disorders: anemia, leukemia, multiple myeloma, mononucleosis, blood poisoning. Arteries and veins, cardiac conduction system, electrocardiogram records, hyper- and hypotension. Cardiovascular disorders: angina pectoris, heard attack, embolism, stroke.	Ch. 7, 8 (Pages: 139-186)	

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7		Digestive System: organs/accessory organs and its functions, nutrition, weight control. Disorders: lactose intolerance, colon polyps, hepatitis, malnutrition, obesity, anorexia.	Ch. 14 (Pages: 323-350)	
8		Urinary System: organs and its functions, nephrons. Disorders of the urinary system: kidney stones, urinary tract infections, renal failure, kidney transplants.	Ch. 15 (Pages: 351-372)	
8, 9		Immune-Defense: pathogens (bacteria, fungi and viruses), lymphatic system, nonspecific and specific defenses, inappropriate immune system activity (allergies, lupus erythematosus, rheumatoid arthritis), HIV and AIDS.	Ch. 9 (Pages: 187-218)	
10		Respiratory System: functions, upper and lower respiratory tract, breathing and gas exchange. Disorders of the respiratory system: asthma, emphysema, bronchitis, lung cancer, cystic fibrosis. Infectious Diseases: flu (antigenic drift and antigenic shift), pneumonia, tuberculosis.	Ch. 10 (Pages: 219-242)	
11,12		Nervous System and Sensory Mechanisms: functions, cells of the nervous system, central and peripheral nervous systems. Infections of the nervous system: encephalitis, meningitis, and rabies. Disorders of neural and synaptic transmission: epilepsy, Parkinson's and Alzheimer's diseases. Organs of the sensory system.	Ch. 11, 12 (245-273, 274-297)	
13		Endocrine System: functions, hormones, hypothalamus, pineal and pituitary glands, pancreas, thyroid and parathyroid glands, testes and ovaries. Homeostasis. Disorders of the endocrine system.	Ch. 13 (Pages: 298-320)	
14		Reproductive System: functions, male and female reproductive systems. Menstrual cycle. Human sexual response, intercourse, and fertilization. Infertility. Sexually transmitted diseases (STDs): gonorrhea, syphilis, chlamydia, hepatitis B, hepatitis C, genital herpes, genital warts, yeast infections, trichomoniasis, pubic lice. Protection against STDs.	Ch. 16 (Pages: 373-398)	
15		FINAL EXAM		

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LABORATORY

WEEK	DATE	TOPIC	EXAMS/Quizzes
1		The metric system	
2		Human skeleton	
3		Microscope and preparation of slides	
4		The scientific methods: acetylcholine and adrenaline experiment on <i>Daphnia</i>	
5		Properties of organic compounds found in cells: carbohydrates, proteins and lipids	
6		Human tissue: histological examination of connective, epithelial, muscle and nervous tissue	
7		Diffusion, osmosis & the effects of salt solutions on living cells	
8		Blood: blood composition and blood types, use of hemocytometer	
9		Mitosis and meiosis: examination of histological slides	
10		Infectious diseases (case studies): collaborative learning and oral presentations	
11		Sheep brain dissection	
12		Sensory organs: cow eye dissection, pseudoisochromatic plates, examination and labeling of diagrams	
13		Fetal pig dissection: review of organ systems	
14		Human reproductive system: examination and labeling of diagrams	