

*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 -Biology 111**

**Class hours total: 5**

**Lecture hours: 3**

**Laboratory hours: 2**

**Credits: 4**

**Fall 2019**

**Instructor Information (Phone#, Office#, email)** \_\_\_\_\_

**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

**Co-requisites** None

<b>Course Student Learning Outcomes</b>	<b>Measurements</b>
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.)**

	<b>General Education Learning Outcomes</b>	<b>Measurements (means of assessment for general education goals listed in first column)</b>
<input type="checkbox"/>	<b>Communication Skills-</b> Students will be able to write, read, listen and speak critically and effectively.	
<input type="checkbox"/>	<b>Quantitative Reasoning-</b> Students will be able to use quantitative skills and the concepts and methods of mathematics to solve problems.	
<input checked="" type="checkbox"/>	<b>Scientific Reasoning-</b> Students will be able to apply the concepts and methods of the natural sciences.	Students will conduct hypothesis- driven laboratory experiments and report and analyze the results.
<input type="checkbox"/>	<b>Social and Behavioral Sciences-</b> Students will be able to apply the concepts and methods of the social sciences.	
<input type="checkbox"/>	<b>Information &amp; Technology Literacy-</b> Students will be able to collect, evaluate and interpret information and effectively use information technologies.	
<input type="checkbox"/>	<b>Values-</b> Students will be able to make informed choices based on an understanding of personal values, human diversity, multicultural awareness and social responsibility.	

**Required Text** Johnson, Michael D. 2017. Human Biology: Concepts and Current Issues, 8<sup>th</sup> 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 (If Applicable)\_Blackboard may be used at the instructor's discretion.**

**Evaluation & Requirements of Students**

1. Objective & essay examinations including a final examination.
2. Various types of writing assignments and/or oral presentations.
3. Evaluation of laboratory performance through testing / laboratory reports / homework assignments/ practicums.
4. Attendance according to school policy.

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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](http://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](http://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](http://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](mailto:olevy@bmcc.cuny.edu), or [twade@bmcc.cuny.edu](mailto: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](http://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.

#### **College Attendance Policy**

At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

#### **BMCC Policy on Plagiarism and Academic Integrity Statement**

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](http://www.bmcc.cuny.edu). For further information on integrity and behavior, please consult the college bulletin (also available online).

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## LECTURE SYLLABUS

<u>WEEK</u>	<u>TOPICS AND CHAPTERS</u>
1	Exploring Life/Science: characteristics of life (homeostasis, metabolism, etc.), levels of organization, defining features of humans, scientific method – <b>Ch.1</b> (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) – <b>Ch.2</b> (Pages: 21-46)
3	Structure & Function/Cells: eukaryotic and prokaryotic cells, plasma membrane, passive and active transport, cell organelles – <b>Ch.3</b> (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 – <b>Ch. 4</b> (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 – <b>Ch. 5, 6</b> (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 – <b>Ch. 7, 8</b> (Pages: 139-186)
7	Digestive System: organs/accessory organs and its functions, nutrition, weight control. Disorders: lactose intolerance, colon polyps, hepatitis, malnutrition, obesity, anorexia – <b>Ch. 14</b> (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 – <b>Ch. 15</b> (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 – <b>Ch. 9</b> (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 – <b>Ch. 10</b> (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 – <b>Ch. 11, 12</b> (245-273, 274-297)

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- 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 examination.

### LABORATORY ASSIGNMENTS, REQUIREMENTS & EXPECTATIONS

#### Laboratory Reports

The instructor will assign specific laboratory reports.

**Homework including graphs** found at the end of all the laboratory exercises should be completed and will be collected by the instructor at his / her request.

A laboratory **Practicum** will be administered by the instructor.

The instructor may administer lab quizzes or may include the laboratory on lecture exams.

No more than 30% of the final grade in BIO 111 will be determined by the laboratory portion of the Course.

The lecture instructor will determine the exact % if he or she is different from the laboratory instructor.

Students are expected to attend all laboratory sessions.

***There is no way of making up a missed Laboratory session.***

Instructors are required to take attendance in the laboratory as well as in the lecture classes even if the classes follow one another on the same day.

\*\*\*\*The requirements set forth above are the **minimum** requirements for the laboratory portion of this course; individual instructors may add to these requirements.

### LABORATORY SYLLABUS

WEEK	EXPERIMENT TITLE	ADDITIONAL INFORMATION
1	The metric system	
2	Human skeleton	
3	Microscope and preparation of slides	
4		

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- The scientific methods: acetylcholine and adrenaline experiment on *Daphnia*
- 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