

## Bio 110 Principles of Biology

Prerequisite: MAT 010 (formerly MAT 1604) and Eng 091 (formerly ENG 1301) or ESL 091 (formerly ESL1301).

Co-requisite: BIO111 Principles of Biology laboratory

Instructor:

3 credits/3-hr lecture,

Meets:	
Email:	
Office: A-507C	
Phone:	
Contact Policy:	

### Course description:

This course is designed to give students an overview of the principles of biology that apply to living organisms. Topics examined will include the structure and function of the cell, diffusion and osmosis, types of plant and animal tissues, molecular biology, and animal reproduction and development. The laboratory illustrates the concepts discussed in the lecture. This course is for non-science major students. Offered in Spanish and English.

### By the end of this course, students should be able to

- Differentiate between problems that are subject to scientific inquiry (factual problems), and the ones that are subject to non-scientific thought (i.e. moral problems).
- Apply the scientific method to problem solving.
- Demonstrate general acquaintance with basic biological molecules and their principal roles in living organisms.
- Recognize the role of various cell structures and processes associated with them, such as cell metabolism, osmosis, and diffusion in supporting life and describe them in general terms.
- Compare cells of different tissue types and make connections between tissue types and their function in a living organism.
- Identify different organs and organ systems and describe their functions.
- Recognize general pathways of an organism's internal environment regulation.
- Identify basic structures involved in storage and expression of genetic information.
- Describe two variants of cell division (mitosis and meiosis); their role in supporting life of organism; reproduction; and inheritance.
- Explain how genetic information is passed from generation to generation based on the laws of Mendelian genetics.
- Students will be able to explain how genetic information is passed from generation to generation based on non-Mendelian genetic principles.
- Compare and contrast the costs and benefits of sexual and asexual reproduction.
- Compare the advantages and disadvantages of internal and external fertilization and internal and external early development.
- Describe structure and function of organs of the human reproductive system and basic stages of human reproduction and development.
- Define key terms for each topic covered in the course.

### REQUIRED Textbooks:

Campbell Essential Biology with Physiology by Erik J. Simon, Jean L. Dickey, and Jane B. Reece, 4-th edition, ISBN-10: 0-321-76332-7

Mastering Biology, Textbook on-line supplement.

Purchasing options:

- the textbook can be obtained in the Hostos Community College bookstore as a package (hard copy

- textbook, access to Mastering Biology on-line supplement, and e-text),
- access to e-text and Mastering Biology can be bought on line from Pearson (<http://www.mypearsonstore.com/bookstore/campbell-essential-biology-with-physiology-plus-masteringbiology-9780321763327>).
  - the hard copy of the textbook can be purchased separately (used books are OK), and Mastering Biology can be purchased on-line (<http://www.mypearsonstore.com/bookstore/campbell-essential-biology-with-physiology-plus-masteringbiology-9780321763327>)

### Grading policy

The Final grade will be determined by the grades on lecture and lab combined as follows:

Activity	
Exams (4-5)	70%
Homework (on-line)	25%
Participation	5%
<b>Total grade</b>	<b>100%</b>

### Attendance and participation

The maximum number of absences is limited to 15% of the number of scheduled class hours per semester. Any student absent more than the indicated 15% (3 classes) 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.

Participation will be determined by how well a student is prepared for class, students' answers to questioned asked in class, and timely completion and submission of all assignments, including on-line assignments. Attendance is not a part of "Participation" grade.

The City University of New York awards letter grades to denote the level of achievement for each course. The grading system is as follows:

Grade	Percentage	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

### Make-up exams

If you have missed an exam, but **have a valid excuse**, you have two weeks to take a make-up exam. All make-up exams will be given on out-of class time and by an appointment only.

### Extra credits

### Assignments

All assignments will be posted on Blackboard. Assignments have to be completed on time as indicated in each assignment instruction. Failure to submit an assignment on time would result in a lower grade: the assignment grade will be decreased by 4 points per each day an assignment is late and affect the participation grade.

**Absolutely no submissions will be accepted after the date/time of the final examination.**

**Conflict resolution**

If you have any issues with the course, your classmates or your instructor, talk to your instructor first. Do not wait till the issue escalates to the size of a problem preventing you from successfully completing the course.

**Academic integrity: Plagiarism, Cheating, and Bribery**

(Excerpt from the Hostos Community College Catalog)

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.

**Plagiarism is a form of cheating, so if any plagiarized material is found in your assignment, you will get no credit for this assignment.**

**College attendance policy:**

(Excerpt from the Hostos Community College Catalog)

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.

**Students with disabilities:**

(Excerpt from the Hostos Community College Catalog)

The Americans with Disabilities Act prohibits discrimination based on disability and requires the College to be physically and programmatically accessible. Beyond the basic requirements of the ADA, Section 504 of the Rehabilitation Act and New York State and New York City statutes, the College has created an office that provides services intended to help each student with a disability maximize his or her potential for success. Based on an intake interview and documentation provided by a student, a variety of accommodations may be provided to assist qualified students to attain their academic objectives. Intake and counseling are provided in English and Spanish.

**For more information go to** <http://www.hostos.cuny.edu/>

**NEED HELP?**

**Hostos Academic Learning Center:** <http://www.hostos.cuny.edu/asc/>

**Mentoring program:** <http://www.hostos.cuny.edu/oa/mentoring.htm>

**Services for Students with Disabilities**

Location: 120 E. 149th Street (Walton Avenue), Rm. D-101

Contact info: (718) 518-4454 (voice/TTY); e-mail: [sswd@hostos.cuny.edu](mailto:sswd@hostos.cuny.edu).

**Counseling Center:**

Location: Carlos E. González Counseling Center 120 E. 149th St. Rm. D-102

Contact info: 718/518-4319 \; e-mail: [infocounseling@hostos.cuny.edu](mailto:infocounseling@hostos.cuny.edu)

## Class schedule

W K	DATE	TOPIC	FOR TODAY	ASSIGNMENT
1	Lec. 1	Introduction: Biology today	Read Ch. 1 pp. 2-20	
2	Lec. 2	Essential Chemistry for Biology	Ch. 2, pp. 23-35	
3	Lec. 3	The Molecules of Life	Ch. 3 pp. 37-53	
4	Lec. 4	Exam 1, Ch. 1, 2, 3 A Tour of the Cell	Ch. 4, pp. 55-73	
5	Lec. 5	The Working Cell	Ch. 5, pp. 75-89	
6	Lec. 6	Cellular respiration: Obtaining Energy from Food	Ch. 6, pp. 91-105	
7	Lec. 7	Photosynthesis: Using light to make food	Ch. 7, pp 107-118	
8	Lec. 8	Exam 2, Ch. 4, 5, 6, 7 The Structure and Function of DNA	Ch. 10, pp. 173-197	
9	Lec. 9	Cellular Reproduction	Ch. 8, pp. 121-143	
10	Lec. 10	Patterns of Inheritance - I	Ch. 9, pp. 145-158	
11	Lec. 11	Patterns of Inheritance - II	Ch. 9, pp. 158-171	
12	Lec. 12	Exam 3, Ch. 8, 9, 10 The Life of a Flowering Plant	Ch. 28, pp. 605-623	
13	Lec. 13	Unifying Concepts of Animal Structure and Function	Ch. 21, pp. 455-467, 472	
14	Lec. 14	Reproduction and Development	Ch. 26, pp. 551-573	
15	Lec. 15	Exam 4- Ch. 28, 21, 26		