

EDWARD R. MURROW HIGH SCHOOL
SCIENCE DEPARTMENT
Allen Barge, Principal
Carlos Reyes, Assistant Principal

Course Syllabus
SBS22X: Advanced Placement Biology II
Spring 2020

1. Instructor Information

Mr. D. Sprague
Office: Room 403
Email: DSprague@schools.nyc.gov
Phone: (718) 258-9283 ext. 4032

Course Web Page: <http://www.spraguescience.com>

Click on the “AP Biology” menu tab at the top. I will use this page to post course information, assignments, review sheets, practice exam questions, and relevant science news.

2. Course Description

The AP Biology course is designed to be the equivalent of a two-semester college introductory biology course usually taken by biology majors during their first year. Many colleges and universities will award college credit and/or permission to take upper-level biology courses to students who earn a qualifying score on the AP exam. The full course description is available from The College Board at www.collegeboard.com.

Prerequisites: two semesters of Living Environment and two semesters of Chemistry

3. Course Themes

Course content centers around four big ideas:

- (1) The process of evolution drives the diversity and unity of life.
- (2) Biological systems utilize free energy and molecular building blocks to grow, to reproduce, and to maintain dynamic homeostasis.
- (3) Living systems store, retrieve, transmit, and respond to information essential to life processes.
- (4) Biological systems interact, and these systems and their interactions possess complex properties.

4. Course Objectives

Upon completion of the course, students will be able to:

- (1) Explain biological concepts, processes, and models presented in written format.
- (2) Analyze visual representations of biological concepts and processes.
- (3) Determine scientific questions and methods.
- (4) Represent and describe data.
- (5) Perform statistical tests and mathematical calculations to analyze and interpret data.
- (6) Develop and justify scientific arguments using evidence.

5. Required Materials

(1) Readings come from the following textbook:

Hillis, David M., Sadava, David E., Heller, H. Craig, & Price, Mary V. (2012). *Principles of Life*, 1st ed. Sinauer Associates & W. H. Freeman.

(2) You must purchase a bound composition notebook to be used for laboratory work.

(3) A four-function, scientific, or graphing calculator must be brought to class to class each day.

6. Grading Policy

50% Exams

15% Laboratory notebook and posters

15% Writing assignments

10% Reading assignments and chapter assessments

10% In-class discussion, individual and group work, and laboratory technique

It is the responsibility of students and parents to check PupilPath (<http://www.pupilpath.com>) regularly for progress reports.

7. Exams

Three cumulative 90-minute exams and a comprehensive final exam will be given over the semester. Please note that the nature and extended length of exams make it difficult to schedule make-up exams. If needed, a single make-up exam will be scheduled in late April or early May during class time; in the rare event that a student must be absent from class on an exam day, the score on the make-up exam will replace the score on the missed exam. The make-up exam will contain different questions than those that appeared on the missed exam.

8. Laboratory Work

Because of the sensitivity of biological specimens and complexity of experimental set-ups, make-up opportunities may not be available for all labs. Any lab that is not complete will receive a grade of zero.

Written laboratory assignments will not be accepted late. For safety reasons, students who arrive late to lab may not be permitted to enter the lab and may be required to make up the lab after school. Inappropriate or dangerous behavior will result in removal from the lab.

9. Assignments

Students must bring a hard (printed) copy of the assignment to class on the due date. Late work will not be accepted. If you must be absent on a day when an assignment is due, it is your responsibility to (1) e-mail me a copy of the work before class time and (2) remember to hand in a hard copy of the completed work the day you return. Brief, unannounced reading quizzes will be given periodically.

10. Classroom Protocol

The classwork and lab technique grade is based on timeliness and attendance, in-class assignments, preparation for and active participation in group work and class discussions, adherence to written and oral directions, care of microscopes and other equipment, and cleanliness of the lab bench. It is expected that you will treat everyone in the classroom with respect, contribute to class discussions, and remain attentive. Cell phones and other electronic devices must be turned off and out of sight; jackets, bags, and other personal items must be stored under the lab bench.

11. Attendance

Regular attendance is mandatory. Class begins five (5) minutes after the end of the previous band. Students who are not in the room at that time will be marked late without a pass. When you are absent from class, it is your responsibility to find out what class activities, assignments, or notes were missed and arrange to make up these activities and get the notes from a classmate.

12. Academic Honesty

All work that you turn in is expected to be your own. When you use someone else's ideas, you must give that person credit, even if you do not use his or her exact words. Anyone who is caught cheating, talking, or using a cell phone or other personal electronic device during an exam or quiz will receive a zero. It is not acceptable to look at another student's written work or show another student your written work.

13. Tentative Schedule

<u>Week</u>	<u>Dates</u>	<u>Discussion Topic</u>	<u>Lab Exercise</u>	<u>Hillis Chapter</u>
1	1/28–1/31	Regulation of Gene Expression	Epigenetics in Rat Pups	11
2	2/3–2/7	Biotechnology	Micropipette Practice	12, 13
3	2/10–2/14	Evolutionary Developmental Theory	Gel Electrophoresis	14
4	2/2–2/28	Population Genetics	Hardy-Weinberg Analysis	15
5	3/2–3/6	Evolution and Speciation	Cladogram Construction	16
6	3/9–3/13	Phylogenetics	Life History Strategies	17, 19
7	3/16–3/20	Population Dynamics	Population Modeling	42, 43
8	3/23–3/27	Competition	Allelopathic Interactions	44
9	3/30–4/3	Trophic Interactions	Dissolved Oxygen	45
10	4/6–4/8	Biogeochemical Cycles	Net Primary Productivity	46
11	4/20–4/24	Conservation Biology	Transpiration Rate	46
12	4/27–5/1	Homeostasis and Metabolism	Lung Capacity Correlation	29
13	5/4–5/8	Review		
14	5/11–5/15	Enrichment	To Be Announced	
15	5/18–5/22	Enrichment	To Be Announced	
16	5/26–5/29	Enrichment	To Be Announced	
17	6/1–6/5	Enrichment	To Be Announced	
18	6/8–6/12	Enrichment	To Be Announced	
19	6/15–6/16	Course Reflection		

This schedule is subject to modification by the instructor.