

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

Course Syllabus  
**SBS21X: Advanced Placement Biology I**  
Fall 2018

### 1. Instructor Information

Mr. D. Sprague  
Office: Room 403  
Email: [DSprague@schools.nyc.gov](mailto: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](http://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) Use representations and models to communicate biological phenomena and solve problems.
- (2) Apply mathematics and statistics to biological models.
- (3) Engage in scientific questioning to extend thinking and guide investigation.
- (4) Plan and implement data collection strategies.
- (5) Perform data analysis and evaluate evidence.
- (6) Work with biological explanations and theories.
- (7) Connect and relate knowledge across scales, concepts, and representations in and across domains.

## 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*, 1<sup>st</sup> 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

Five cumulative exams and a comprehensive final exam will be given over the semester. Because the nature and extended length of exams make it impossible to schedule make-up exams during the semester, a single make-up exam will be scheduled in January 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. The day you return from an absence, you must present me with a note from a parent or doctor explaining the reason for the absence.

## **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	9/5–9/7	Course Introduction		1
2	9/12–9/14	Animal Behavior	Ethology	41
3	9/17–9/21	Biochemistry	Molecular Models	2
4	9/24–9/28	Enzymes	Enzyme Catalysis	3
5	10/1–10/5	Biological Macromolecules	Toothpickase	3
6	10/9–10/12	Subcellular Organization	Microscopy	4
7	10/15–10/19	Membranes and Transport	Osmosis	5
8	10/22–10/26	Intercellular Signal Transduction	Water Potential	5
9	10/29–11/2	Cellular Respiration	Plasmolysis	6
10	11/5–11/9	Photosynthesis	Respiration Rate	6
11	11/13–11/16	Cell Cycle	Chromatography	7
12	11/19–11/21	Classical Genetics	Spectrophotometry	8
13	11/26–11/30	DNA and Modern Genetics	Timing Mitosis	9
14	12/3–12/7	Protein Synthesis	Chi-Square Test	10
15	12/10–12/14	Regulation of Gene Expression	Linkage Analysis	11
16	12/17–12/21	Human Genome Project	DNA Extraction	12
17	1/2–1/4	Biotechnology	mRNA Processing	13
18	1/7–1/11	Evolutionary Developmental Theory	Gel Electrophoresis	14
19	1/14–1/18	Population Genetics	Hardy-Weinberg Analysis	15

*This schedule is subject to modification by the instructor.*

# *Edward R. Murrow High School*

DESIGNATED A SCHOOL OF EXCELLENCE BY THE UNITED STATES DEPARTMENT OF EDUCATION  
CARLOS REYES, ASSISTANT PRINCIPAL SCIENCE      ALLEN BARGE, PRINCIPAL

## COURSE CONTRACT

**SBS21X**  
**Advanced Placement (AP) Biology**  
Fall 2018  
Mr. Sprague

I have read and understand the following:

1. AP Biology is a rigorous, college-level course, equivalent to a two-semester introductory biology course usually taken by biology majors during their freshmen year of college. The difficulty, workload, expectations, required reading, and instructional methods are the same as those in a college course.
2. Students are expected to register and sit for the College Board's AP Biology Exam in May. There is a fee for the exam, but fee reductions may be available to students in financial need.
3. Course and grading policies are contained in the document entitled "Course Syllabus: Advanced Placement Biology I, Fall 2018". Please read this document carefully.
4. Students should expect a minimum of eight hours of homework in AP Biology each week, which may include reading, answering textbook questions, writing essays, writing lab reports, completing other written assignments, and studying for exams. Required work will be assigned over school recesses and holidays.
5. A copy of this course contract can be found on the course webpage at <http://www.spraguescience.com>.

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Student Name (print)

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Parent Name (print)

\_\_\_\_\_  
Parent Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Parent Daytime Phone Number  
(between 8 a.m. and 3 p.m.)

\_\_\_\_\_  
Parent E-mail Address