

EDWARD R. MURROW HIGH SCHOOL
SCIENCE DEPARTMENT
Allen Barge, Principal
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Course Syllabus
SBS22X: Advanced Placement Biology II
Spring 2017

1. Instructor Information

Mr. D. Sprague
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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) 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*, 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 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 unit exams and a comprehensive final exam will be given over the semester. In general, ***no make-up exams will be given***, regardless of whether the absence was excused or not; students who do not take the exam will receive a score of zero. However, the lowest unit exam score of the semester will be dropped.

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

Late work will not be accepted. If you were absent on a day when an assignment was checked or collected, it is your responsibility to remember to hand in the completed work the day you return. E-mailed work will not be accepted; students must bring a hard copy of the assignment to class. 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	1/31–2/3	Population Genetics	Hardy-Weinberg Analysis	15
2	2/6–2/10	Speciation and Phylogeny	Phylogenetics	16, 17, 19
3	2/13–2/17	Population Dynamics	Life History Strategies	42, 43
4	2/27–3/3	Species Interactions	Ecology of a Square Meter	44, 45
5	3/6–3/10	Biogeochemistry and Conservation	Dissolved Oxygen	46
6	3/13–3/17	Temperature Regulation	Net Primary Productivity	29
7	3/20–3/24	Endocrine Regulation	Transpiration Rate	30
8	3/27–3/31	Immune Responses	Q ₁₀ in <i>Daphnia</i>	31
9	4/3–4/7	Nervous Regulation	Lung Capacity	34
10	4/19–4/21	Gas Exchange and Circulation	Blood Pressure	37, 38
11	4/24–4/28	Digestion and Excretion	Reaction Time	39, 40
12	5/1–5/5	Review		
13	5/8–5/12	Enrichment	To Be Announced	
14	5/15–5/19	Enrichment	To Be Announced	
15	5/22–5/26	Enrichment	To Be Announced	
16	5/30–6/2	Enrichment	To Be Announced	
17	6/5–6/9	Enrichment	To Be Announced	
18	6/12	Course Reflection		

This schedule is subject to modification by the instructor.