

Advanced Placement (AP) Biology  
2019-2020 Class Syllabus  
Mrs. Russo  
Room B220

**Course Description:**

This year-long study of biology is an introductory biology course usually taken by biology majors during their first year of college. The course is structured around the enduring understandings within four big ideas in biology, and will provide a basis for students to develop a deep conceptual understanding as well as opportunities to integrate biological knowledge and science practices through inquiry-based activities and laboratory investigations.

AP Biology is historically a challenging and difficult class, but with effort and dedication, many students do well. There are many resources available to help you, and students using them often succeed. I am committed to helping you be as successful as you choose to be, so please do not hesitate to come in or contact me for any questions, concerns or assistance.

**Course Content**

AP Biology is structured around four big ideas, the enduring understandings within the big ideas, the essential knowledge within the enduring understandings and seven science practices.

**The Big Ideas:**

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

**7 Science Practices:**

1. The student can use representations and models to communicate scientific phenomena and solve scientific problems.
2. The student can use mathematics appropriately.
3. The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course.
4. The student can plan and implement data collection strategies appropriate to a particular scientific question.
5. The student can perform data analysis and evaluation of evidence.
6. The student can work with scientific explanations and theories.
7. The student is able to connect and relate knowledge across various scales, concepts and representations in and across domains.

**Laboratory Component**

Students will be given the opportunity to engage in student-directed laboratory investigations throughout the course for a minimum of 25% of instructional time. Students will conduct a minimum of eight inquiry-based investigations (two per big idea throughout the course). Additional labs and activities will be conducted to deepen students' conceptual understanding and to reinforce the application of science practices within a hands-on, discovery-based environment. Students will be given the opportunity to develop, record and communicate the results of their laboratory investigations.

## Labs

### Big Idea 1: Evolution

Investigation 1: Artificial Selection

Investigation 2: Mathematical Modeling: Hardy-Weinberg

Investigation 3: Comparing DNA Sequences to Understand Evolutionary Relationships with BLAST

### Big Idea 2: Cellular Processes: Energy and Communication

Investigation 4: Diffusion and Osmosis

Investigation 5: Photosynthesis

Investigation 6: Cellular Respiration

### Big Idea 3: Genetics and Information Transfer

Investigation 7: Cell Division: Mitosis and Meiosis

Investigation 8: Biotechnology: Bacterial Transformation

Investigation 9: Biotechnology: Restriction Enzyme Analysis of DNA

### Big Idea 4: Interactions

Investigation 10: Energy Dynamics

Investigation 11: Transpiration

Investigation 12: Fruit Fly Behavior

Investigation 13: Enzyme Activity

### Required Materials (not provided):

- 1 notebook (composition)
- several pens (blue/black ink)
- 1 calculator (See CollegBoard for a list of APPROVED CALCULATORS)
- shoe box or other box (to hold your EXTRA CREDIT)
- 1 (1 ½ inch) three-ringed binder with sections for
  - Homework
  - Activities
  - Notes
  - Assessments

### Required Materials Supplied by Instructor:

- Campbell Biology (AP Edition)
- Codes for Essential Apps: Albert.io, Google Classroom, Remind, Masering Biology
- AP Biology Test Prep Booklet - Barron's AP Biology Exam Prep Booklet, 6th Edition or newer (if available). Do not buy this book! I will do my best to provide you with one.

### Assignments:

Students will be regularly assigned homework, in-class activities, lab exercises and reports, quizzes, and exams (take-home and in-class). Student expectations are very high for this course. You should plan to study 20 minutes outside of class for every hour in class. We will cover 2-3 chapters per week and will have multiple choice and essay exams on a regular basis. Assignments for each chapter/unit will be due on the day of the exam.

Graded assignments will be returned within one week from when it was collected. Exams will not be curved but for MP 1, you may earn 10 points extra credit (per exam) all/none if your study log is complete and supported with evidence. Cumulative exams will be graded on an AP scale and will begin in MP3 (no extra credit on cumulative tests). Marking period grades are earned based on

the sum of the weighed percentages. Final grades are earned based on the sum of the six marking period grades and final exam.

**Evaluation/Grading Procedures:** Total points earned are weighted as follows:

- Assessments = 65%
  - Tests/Projects 45%
  - Chapter Quizzes 15%
  - Pre/Post-Lab Quizzes 5%
- Class work = 25%
  - Labs 15%
  - Activities 10%
- Homework = 10%
  - Guided readings
  - Worksheets
  - Study Log/Index Cards
  - Internet lessons/activities
  - Other

Each marking period is worth approximately 14% of your grade. The final exam is worth 15% of your grade. ALL STUDENTS WILL TAKE THE FINAL EXAM. However, if you have a 93% or higher for EACH marking period, the average of the 6 marking periods may count as the final exam grade if you like.

**Grading scale:** 90-100% A    80-89% B    70-79% C    65-69% D    Below 65% F

**\*\*Please check your progress regularly through the portal.\*\***

**Weighting of AP Courses:** AP = 1.10 (Standard Course 80% = Honors 84% = AP 88%)

**Late Work:** Late assignments will receive half credit if turned in the following day. Mrs. Russo does not accept zeros. If your work is one day late, she will make you stay after with her and DO THE WORK.

**Absence Work:** Class attendance and participation is essential for success. It is your responsibility to clarify missed assignments with classmates or with me prior to the next class. All excused absence work, including labs, must be made up within the excused absence time frame.

**Exam Re-Grades:**

If, after consulting the key for your exam, you lost credit due to (1) a correct answer that was marked wrong, or (2) the answer you chose can be justified by content explicitly detailed in your Campbell Biology textbook, then please discuss this issue with me within one week of the date of the exam being returned to you to receive additional credit.

**Student Code of Conduct:** Students are to submit only their own work for evaluation, to acknowledge the work and conclusions of others, and to do nothing that would provide an unfair advantage in their academic efforts. Students who fail to comply with this JMHS policy are subject to disciplinary action. Plagiarism and cheating will not be tolerated and may lead to failure on an assignment. Please be advised that copying an answer key partially/fully from the internet counts as cheating.

**Essential Apps:**

**REMIND:** Text 81010 Message @f96cbd

**Google Classroom:** eto5vs

**Albert.io:** N5ZNO4CS3THY

**Mastering Biology:** MBRUSSO5715733

**Student Success:**

- Studying independently **before** coming to class is necessary to benefit from what we do in class. The class calendar will indicate the dates by which assignments should be completed. **WORK AHEAD WHENEVER POSSIBLE.**
- Lecture notes and reading guides that accompany the content in your Campbell Biology textbook will be available for download on my class page.
- I may need to contact you between classes through individual and group email/Remind messages. **You are responsible for any messages, including assignments and schedule changes, I send via email/Remind. You also may contact me via email in addition to seeing me during office hours (after school).**

**Classroom Rules:**

- All policies set forth in the JLHS Student Handbook must be adhered to.
- Safety is a primary concern and all students must comply with the Laboratory Safety Contract.
- Cell phones and other personal electronic devices may be used for educational purposes in this class. However, such devices may not be used for personal reasons. Further, electronic devices are not to be used to take photographs/video/audio of any person in the classroom, ever. However, documentation of laboratory set up and data during laboratory is highly encouraged (photos/videos).
- While there is a late/missing work policy, Mrs. Russo understands your schedule is busy and that sometimes, exceptions need to be made. **IF YOU TAKE ADVANTAGE OF MRS. RUSSO'S GOOD NATURE, the policy will be enforced. Do NOT ruin it for the class!**

## AP Biology Class Contract

I have read and understand the policies and class rules for AP Biology class, as described in the AP Biology class overview and I promise to commit to this class by giving my best effort every day, all year long.

I promise that I will abide by the class rules for the entire duration of class and the entire school year.

I promise to do my own work all year long, even though I know that many answers to homework assignments can be found online. I understand that Mrs. Russo reads all of my homework answers carefully. If my answers are copied answers (from classmates and/or internet), I will have to REDO it on my own after school with Mrs. Russo. I UNDERSTAND THAT MRS. RUSSO DOES NOT ACCEPT ZEROS!

I promise to turn my classwork in on time all year long. I understand that I will not earn credit for work that is more than one day late. Mrs. Russo is very kind and understands how busy you are. She may even bend this rule for you from time to time. I promise not to take advantage of Mrs. Russo's good nature as this is disrespectful.

I promise that I will make every effort to maintain excellent class attendance and punctuality to AP Biology class each and every day. I promise that if I am absent however, I will take responsibility for getting my assignments and completing them within the allowed time, as outlined in the JLHS Student Handbook. If I am late to class, I accept that I will be marked late in portal, unless I have a pass.

I promise that I will make safety a priority in AP Biology class. I will ALWAYS wear my safety glasses for the entire lab period. I will read all of the labs in ADVANCE and follow all laboratory procedures during lab. I promise to CLEAN UP after myself, during class and laboratory and maintain a neat, organized lab station.

I promise to advocate for myself in AP Biology class, every day, all year long. This means that I will participate and ask questions during class. Also, I will seek out extra help after school from my teacher whenever I need it because I know I do not need an appointment to do so- Mrs. Russo is available for extra help most every day after school. I will check my grades regularly and if I have a question, I will ask my teacher about the grades.

I will study/practice independently for the AP Biology exam each and every day, even if it is for only 15 minutes each day by either doing Albert.io questions, Mastering Biology questions and/or Barron's questions.

I will form a study group on my own with other AP Biology students. I promise to meet/work with my study group at least once/month all year long.

\*Parents/Guardians: I give permission for my student to watch science-related PG/PG-13 rated films for educational purposes. I understand that I may call for additional details, if necessary.

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Printed: Full Name of the Student

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Student Signature

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Date

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Parent/Guardian Signature

\_\_\_\_\_  
Date

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Teacher Signature

\_\_\_\_\_  
Date

