LOS ANGELES HIGH SCHOOL OF THE ARTS

# AP® BIOLOGY SYLLABUS

FALL 2023 **Ms.** Cathy Kwan, LAHSA School Principal

## School Address:

701 S. Catalina Street, Los Angeles, CA 90005

Office: 213.480.4600

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## Instructor:


## Mrs. Jill Aller

**email**: jill.aller@lausd.net

**Room** : 4th floor, A465


**Tutoring**:

**Mondays after school**

**3:45-4:45 PM**

Google #: (213)465-3534

**Course: AP® Biology**

Credit: Year-long

*Text*: Urry, Cain et al, Campbell Biology (11th Edition), AP Edition, Other readings will be provided as needed.

**Schedule**: 271 min/regular week

Period 3 {Block 1- T, Th (1-3-5)}

107 minutes per class

Mondays (all periods)

57 minutes per class

LAHSA
at the Robert F. Kennedy Community Schools

## Course Overview

AP® Biology is a 2 semesters college level course offered to 10th-12th grade students. AP® Biology includes those topics regularly covered in a college introductory biology course.

AP® Biology is a course that aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology. This course is designed to prepare students for the Biology College Board Advanced Placement Exam.

## Behavior Expectations

1. **RESPECT** yourself, others, and the campus. Follow laboratory safety rules and adhere to the safety contract.
**2. Be DEDICATED to one's studies.** Come to class every day, prepared and on time. The difficulty and intense nature of this class makes it incredibly challenging for students to catch up after missing a class. Complete the required reading assignments PRIOR to coming to class
**3. Be HONEST and demonstrate INTEGRITY.** Turn in only your own original work, always cite your sources otherwise it is plagiarism, it is cheating.
**4. Maintain HEALTHY RELATIONSHIPS.**
**5. COMMUNICATE appropriately.**
**6. Be RESPONSIBLE.** Follow school and classroom rules and behavior expectations. Cell phones, and other electronic device ARE NOT ALLOWED in class. Food, drinks other than water, candy, or gum are prohibited.

### CONSEQUENCES:

•Discipline will be handled within the classroom as often as possible for minor disturbances 1. The student will be asked to stop their behavior 2. If the behavior does not change the student's parents and the counselor will be contacted. 3. The student will be removed from class and sent to an administrator.

## AP® Exam Schedule:

**It is expected that all students enrolled in class will register and take the AP® Biology exam on Wednesday, May 10, 2023 at 12:00 PM .**

## LABORATORY SAFETY CONTRACT

RULES FOR THE SCIENCE LABORATORY AND CLASSROOM [1]

I understand that I am responsible for my own safety and for the safety of others, therefore –

**I will...**

- act responsibly at all times.
- follow all instructions given by the teacher.
- wear safety goggles and other personal protective equipment when instructed.
- tie back long hair and remove jewelry when conducting investigations.
- wear shoes with closed ends (toes and heels) when appropriate.
- never eat or drink during an investigation unless instructed to do so by the teacher.
- notify the teacher immediately of any emergency.
- keep my work area clean.
- handle living organisms and preserved specimen responsibly and with respect.

**I know...**

- the location of the fire extinguisher and emergency fire blanket and understand how to use them.
- the location of the eye wash and emergency shower and how to use them.
- not to remove chemicals or equipment from a room without permission.
- not to enter or work in the storage or preparation rooms unless supervised.
- not to work alone in the laboratory.
- who to contact in an emergency.

X_____

Student Name

## Grading/RUBRIC: Equitable Grading Practice (EGI) and Growth Mindset

In order to accommodate student diversity in learning, I will be using an EGI Approach to grading. The key components of this Grading system are:

1. Grades will be determined solely on achievement of course/grade level standards. rubrics will be used to provide student feedback throughout the course (not just points or percentages).
2. Students are not expected to have immediate mastery but are expected to show progress through the course.
3. Students will have multiple opportunities to show what they know and understand.Re-take opportunities and revisions are available to improve performance.
4. In order to receive a rubric score in any particular learning target, the most consistent or recent score will be used. For example, if you score a 1, 2, 2, 3, 2, your score would be a "2."
5. Student attendance, work habits, behavior, and cooperation will be reported separately.

| | | |
|---|---|---|
| 4 | **Mastery/ Advanced**<br>Final Mark: A or 4 for demonstrating advanced or at least 75% of the LTs is 4, nothing below 3 | I demonstrate a thorough understanding of the learning target, and I can apply this learning target in other contexts. I can accurately teach it to others.<br>The student has earned 81-100% of the Essential Knowledge/Skills. |
| 3 | Proficient Learners<br>Final Mark: B or 3 for demonstrating proficiency or at least 75% of the LTs is 3, nothing below 2 | **I demonstrate a thorough understanding of the learning target, and I can apply this learning target in other contexts. I can accurately teach it to others.**<br>**The student has earned 81-100% of the Essential Knowledge/Skills.** |
| 2 | Basic Proficient<br>Final Mark: C or 2 for demonstrating at least basic understanding or if all or majority of LTs is 2, | I demonstrate some understanding of the learning target, but because of the gaps in my understanding, I still need more practice and descriptive actionable feedback to show growth and progress towards mastery.<br>The student has earned 41-60% of the Essential Knowledge/Skills.. |
| 1 | Limited Proficient<br>Final Mark: D or 1 for demonstrating at least beginning level or all or majority of LTs is 1, | **I demonstrate very minimal understanding and/or misunderstanding of the learning target, and I need additional instructional support or significant reteaching.**<br>**The student has earned 21-40% of the Essential Knowledge/Skills.** |
| 0 | Not Yet Proficient/no evidence<br>Final Mark: F or 0 means none of the learning targets are achieved with at least a 1 LP | I did not submit any work to be accurately assessed.<br>The student has earned 0-20% for no to very minimal evidence or unsatisfactory evidence of the Essential Knowledge/Skills. |

# AP BIOLOGY A Learning Targets (LTs)

| | |
|---|---|
| LT#1 | INQUIRY/Engage in Scientific Questioning: I can plan and carry out a controlled experiment to collect, analyze, and communicate data to serve as the basis for evidence. |
| LT#2 | DEVELOPING and USING MODELS:<br>I can use representations and models to communicate scientific phenomena and solve scientific problems. |
| LT#3 | BACK IT UP (READING COMPREHENSION and ANALYSIS, WRITING)<br>I can read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations.<br>I can evaluate claims, evidence, and reasoning to determine the validity of arguments. (Claim-Evidence-Reasoning) I can write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence |
| | **AP Bio LEARNING TARGETS** |
| LT#4 | Mathematics and Computational Thinking.<br>I can use Mathematics appropriately in representing physical variables and their relationships; statistically analyzing data; recognizing, expressing and applying quantitative relationships. |
| LT#5 | Genetics and Evolution (big idea #1)<br>The process of evolution drives the diversity and unity of life.<br>I can connect and relate my knowledge with how change in the genetic make up of population over time is evolution, how organisms are linked by lines of descent from common ancestry and how the origin of the living systems is explained by natural processes. |
| LT#6 | Biological Systems and Homeostasis (big idea #2)<br>Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.<br>I can explain and provide evidence from text, lab results, research, etc. that biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain homeostasis. |
| LT#7 | Central Dogma (DNA, RNA, Genetic Variation and Cellular Communication) (big idea #3)<br>Living systems store, retrieve, transmit, and respond to information essential to life processes.<br>I can summarize/synthesize how living systems store, retrieve, transmit and respond to information essential to life processes. |
| LT#8 | Biological Systems and Interactions (#4)<br>Biological systems interact, and these systems and their interactions possess complex properties.<br>I can explain how biological systems interact and describe how these systems and their interactions posses complex properties. |
| LT#9 | LAHSA OUTCOME/ Linked Learning Project<br>**Innovation**: LAHSA grads creatively employ a set of pathway skills to execute an artistic vision.<br>**Citizenship**: LAHSA grads contribute to the global and local community as culturally aware and informed citizens and leaders<br>**Communication**: LAHSA grads clearly articulate complex ideas in multiple ways.<br>**Critical Thinking**: LAHSA grads strategically and systematically solve problems through data-analysis and inquiry.<br>**Collaboration**: LAHSA grads maintain accountability within the dynamics of a team.<br>**Professionalism**: LAHSA grads independently set goals and implement a plan and reflect on their current academic and post-secondary goals and persistence. |

***BEHAVIORAL MARKS:***

*Attendance, work habits, and cooperation will not be counted towards the final grade, but will be assessed separately every 5-week grading period.*

***WORK HABITS***

***Excellent(E)**-Completes 80-100% of assignments, actively participate, and works toward mastery of learning targets.*

***Satisfactory (S)**-Completes at least 60% of assignments with active participation and efforts towards mastery of learning targets*

***Unsatisfactory (U)**-Completes less than 60% of assignments, does not participate and not making an effort in improving performance in class.*

***COOPERATION***

***Excellent(E)**- Follows all classroom procedures and behavior expectations consistently. Comes to class every day, prepared, and on time, respecting everyone and everything in the classroom.*

***Satisfactory (S)**-Follows most classroom procedures and behavior expectations most of the time. Comes to class most days and is most of the time prepared, respecting everyone and everything in the classroom.*

***Unsatisfactory (U)**-Does not follow the classroom procedures and the behavior expectations. Chronically missing or tardy in class, unprepared, and does not demonstrate respect, responsibility, or safety for oneself or others in the classroom*

## Laboratory Component & Science Practices

In addition to the Big Ideas, the AP Biology course is also structured around inquiry in the lab and the use of the seven science practices. The experience is used to emphasize that biology and science is a process involving the development of a hypothesis, collection of data, and analysis of results.

To ensure the laboratory component of the course is met, a minimum of 25% of class time will be devoted to lab work. A minimum of two inquiry-based investigations will be conducted per Big Idea as required by the course. Inquiry labs are taken from AP Biology Investigative Labs: An Inquiry-Based Approach (below). Because the Big Ideas are interrelated, the inquiry-based investigations will not necessarily be conducted in this order. In addition to these inquiry-based labs, **additional required labs will be accessible during the 4 required AP Bio AP readiness sessions at UCLA (Saturdays-dates will be available soon)** will supplement these to emphasize and deepen understanding of content covered in class.

## The Seven Science Practices

The student can (is):
1. Use representations and models to communicate scientific phenomena and solve scientific problems.
2. Use mathematics appropriately.
3. Engage in scientific questioning to extend thinking or to guide investigations within the context of the course.
4. Plan and implement data collection strategies appropriate to a particular scientific question.
5. Perform data analysis and evaluation of evidence.
6. Work with scientific explanations and theories.
7. To be able to connect & relate knowledge across various scales, concepts & representations in and across domains.

Students will maintain a written record of investigations conducted. In addition, they will be asked for the following throughout the course:

## Social & Ethical Concerns

It is essential that students connect their classroom knowledge to socially important issues. AP Biology will allow students to learn about, and discuss, many issues in a variety of formats. Issues will be discussed in a class setting, both live and electronically. Discussion formats may include online forums, research papers, debate, and presentations on current topics having social or ethical issues associated with them. Since the goal is to discuss timely events, the list below is simply an illustration of news issues that continually appear, but will not necessarily be discussed during class.

-Stem Cell Research (Big Idea 3)
-Heal the Bay Project and Global Warming (Big Idea 4)
-Antibiotic Resistance and the Problems with Improper Antibiotic Use (Big Idea 1)
-Genetically Modified Food (Big Idea 3)
-Use of Genetic Information (Big Idea 3)

### Absent Work/Late Assignment Policy

1. For excused/unexcused absence, email your teacher for the assignment missed on or before the day you were absent, check your SCHOOLOGY for the assignments you need to turn in that day.
2. Turn in everything you missed the day you report back to school with a parent/guardian's note explaining the reason/s for your absence.
3. Missing Labs and quizzes are hard to make up, do your best to complete and turn in on time.
4. Make-up opportunity available for your mid-term and final exam only if you notify me in advance and with valid reason/s.

### Hallway/Restroom Policy

Hallway/Rest room Pass is required, only one at a time is allowed to go to the restroom, and we observe the "10 minute rule" which means no one is allowed to go to the rest room the first and the last 10 minutes of class.

## The Big Ideas:

The AP Biology Curriculum is framed around four Big Ideas. Each Big Idea has a set of core concepts called Enduring Understanding. These are the main topics used to guide the AP Biology course curriculum. The outline below illustrates the AP Biology Curriculum Big Ideas and the Enduring Understandings topics covered in class.

| BIG IDEAS | ENDURING UNDERSTANDING |
|---|---|
| One: The process of evolution drives the diversity and unity of life. | A. Change in the genetic make up of population over time is evolution.<br>B. Organisms are linked by lines of descent from common ancestry.<br>C. The origin of the living systems is explained by natural processes. |
| Two: Biological Systems utilize energy and molecular building blocks to grow, reproduce, and maintain homeostasis. | A. Growth, reproduction, and maintenance of the organization of the living systems require free energy and matter.<br>B. Growth, reproduction and dynamic homeostasis require that cells create and maintain internal environments that are different from their external environments.<br>C. Organisms use feedback mechanisms to regulate growth and reproduction, and to maintain dynamic homeostasis.<br>D. Growth and dynamic homeostasis of a biological system are influenced by changes in the system's environment.<br>E. Many biological processes involved in growth, reproduction, and dynamic homeostasis include temporal regulation and coordination. |
| Three: Living Systems retrieve, transmit, and respond to information essential to the life process. | A. Heritable information provides for continuity of life.<br>B. Expression of genetic information involves cellular and molecular mechanisms.<br>C. The processing of genetic information is imperfect and is a source of genetic variation.<br>D. Cells communicate by generating, transmitting, and receiving chemical signals.<br>E. Transmission of information results in changes within and between biological systems. |
| Four: Biological systems interactions possess complex properties. | A. Interactions within biological systems lead to complex properties.<br>B. Competition and cooperation are important aspects of biological systems.<br>C. Naturally occurring diversity among and between components within biological systems affects interactions with the environment |

## Supplies:

- **Chrome book/ lap top (must bring every day)**
- A Spiral/composition Notebook (your Science Journal)
- Colored pencils /crayon
- Glue stick, tape, Ruler, graph paper
- Pencil, black or blue ink pen

## ELECTRONIC DEVICE POLICY:

***CELLPHONES and other electronic device*** are **not allowed** in class it will be **confiscated** if it is used for whatever reason during class hours. **Parents will be notified for such offense.**

**Consequences**

1. Verbal Warning will confiscate the phone, will be returned after class.
2. Confiscate, will be returned after school
3. **Admin referral, will be returned until parents call and pick up the phone.**

Remember, AP® Biology is a rigorous course which demands dedication and personal responsibility from each student. Due dates will be provided for all assignments.

## Statement of Understanding

**By signing this contract, the parent/guardian and the student acknowledge that they have read the syllabus for AP® Biology class at the Los Angeles High School of the Arts and that they understand and agree to the commitment necessary to be successful in this course.**

**Please complete the information below and return this statement of understanding to Mrs. Aller by Friday, Aug. 21,2023.**

**Parent or Guardian Preferred Contact Method? (circle one) Phone Email Both**

**Phone number:** _____

**Email address:** _____

**Student Printed Name:**

_____Date_____

**Parent/Guardian Printed Name and Signature:**

_____Date_____

**Note from Parent/Guardian:**
(Important information such as allergies, whether or not your child is wearing contacts (for safety lab purposes), should be wearing glasses, seating accommodations, etc.)

_____
_____
_____
_____

**FOR QUESTIONS/CONCERNS:**
MRS. JILL ALLER

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Google phone number to call/text
***(213) 465-3534***
*Room # 4th floor, A465*