Course Syllabus

Course Title: Biology AB
School Year: 2024-2025
Semester(s): 1 and 2
Grade Level(s): 9, 10, 11, 12
Course Day(s) and Times: Tuesdays and Thursdays, 12:00 pm - 1:00 pm PST

Teacher Information:

- **Name:** Ingrid Moon
- **Email:** ingrid.moon@brancheslearning.org
- **Office Hours:** By appointment only
- **Branches Learning Main Office Number**: (323) 955-0114

Class Materials - https://brancheslearning.org/product/biology/#Materials
Reference / Text - https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/

Course Description

This biology course aligns with the Next Generation Science Standards (NGSS) and allows students to examine concepts that explain how living organisms and systems work. Students use scientific inquiry, interactive virtual labs, and project-based learning to develop a thorough understanding of cellular biology, genetics, heredity, the chemistry of life, physiology, and ecology. Students ask questions, make observations, and draw conclusions based on evidence. Projects promote creativity and encourage students to develop innovative solutions to real-world problems. Through this course, students will develop a deep understanding of the complex interactions between living organisms and their environment.

Course Units

Unit 1: Cell Structure, Function, and Growth ● HS-LS1-1: Genes, Proteins, and Tissues ● HS-LS1-2: Interacting Body Systems ● HS-LS1-3: Feedback Mechanisms and Homeostasis ● HS-LS1-4: Cellular Division and Differentiation	Understanding the fundamentals of life from the atom up. - Taxonomy - Anatomy - Cloning
Unit 2: Inheritance of Traits ● HS-LS3-1: Chromosomal Inheritance ● HS-LS3-2: Inheritable Genetic Variation	Understanding how organisms and populations reproduce and change over time to adapt to

• HS-LS3-3: Variation and Distribution of Traits • HS-LS4-2: Four Factors of Natural Selection • HS-LS4-3: Adaptation of Populations • HS-LS4-5: Environmental Change - Speciation and. Extinction	changing environments (or not). - Mendelian Genetics - Inherited Diseases - Endangered Organisms
Unit 3: Ecosystem Interactions & Energy • HS-LS2-1: Carrying Capacity of Ecosystems • HS-LS2-2: Biodiversity and Populations in Ecosystems • HS-LS2-4: Biomass and Trophic Levels • HS-LS2-8: Social Interactions and Group Behavior • HS-LS2-6: Ecosystem Dynamics, Functioning, and Resilience	Understanding how large-scale systems work together to create balance, and the consequences of systems upsetting the balance. - Energy - Apex and Keystone Species - Human Intervention
Unit 4: Earth's Atmosphere: Chemical Cycling • HS-LS1-5: Photosynthesis + Energy Transformation • HS-LS1-6: Formation of Carbon-Based Molecules • HS-LS1-7: Cellular Respiration and Energy Transfer • HS-LS2-3: Aerobic and Anaerobic Cycling of Matter • HS-LS2-5: Cycling of Carbon in Ecosystems • HS-ESS2-7: Coevolution of Life + Earth's Systems	The chemical cycles that keep our biosphere habitable, as compared with Earth's past atmosphere and atmospheres on other worlds. - Astrobiology - Nutrient Cycling in Soil - Climate Change - Acidification of Oceans

Assignments and Projects

Assignments and project descriptions will be provided for each unit on the web site and will be turned in on Google Classroom. Students will complete one guided experiment during the unit, and one creative project to present as evidence of learning at the end of each unit. Quizzes will be administered to assess learning and identify areas for continued improvement. Weekly prompts and responses are participatory activities conducted during class. Points cannot be made up for missed classes or lack of participation, though there are more weeks than points, so it is possible to earn extra credit / bonus points by participating.

Unit	Deliverable	Points
1	Experiment and Report	10

1	Modeling Project	15
2	Experiment and Report	10
2	Modeling Project	15
all	Weekly Prompts & Responses (1 each)	20
all	Quizzes (5 each)	30
	Total (Semester 1)	**100**

Unit	**Deliverable**	**Points**
3	Experiment and Report	10
3	Modeling Project	15
4	Experiment and Report	10
4	Modeling Project	15
all	Weekly Prompts & Responses (1 each)	20
all	Quizzes (5 each)	30
	Total (Semester 2)	**100**

Course Expectations:

- Always come to class prepared with prior assignments completed.
- Expect to have coursework and project work outside of class time.
- Keep your camera on; active cameras count toward participation.
- Submit work on time, and you will never fall behind.
- Treat others with respect; that includes remaining focused on screen and in the chat, as well as during group work in breakout rooms.
- The more you participate in class, the more your peers will respect you.
- Never feel afraid to ask for help - the only dumb question is the one never asked.
- Communicate with me as soon as possible if there is any issue, question, or need for additional support.

Grading Scale
High School, Grades 9-12

- A = 90% -100%
- B = 80%-89%
- C = 70%-79%
- D = 60%-69%
- F = 0%-59%

Final grades are determined by the quality and completion of assignments, attendance, and participation.

Important Branches Learning Policy Information

Camera Policy

Branches Learning requires students to keep their cameras on during live classes unless otherwise instructed by the teacher. Exceptions can be made in rare circumstances if the course teacher, supervising teacher (HST), and the parent all approve a camera waiver.

Headset Policy

Students attending live classes from a shared space must have a headset with a microphone to ensure the class is not disrupted by background noise.

Attendance Policy

Absences must be reported to the course instructor via email or sent to info@brancheslearning.org. Class recordings are available upon requests.
Attendance and participation are part of the final grade. Students who miss more than 40% of live classes may fail the course. Exceptions may be made if a pre-approved plan is in place.

Late Work

Assignments turned in after the due date will result in a lower grade unless pre-approved by the instructor.