



Crocus Plains Regional Secondary School

AP Biology Course Outline

Teacher: Ms. Andrea Bucklaschuk

Email: Bucklaschuk.andrea@bsd.ca

Textbook: Urry, Lisa A., et al. *Campbell Biology 12th Edition*. Pearson, 2021

Required Materials:

- Pencils and pens
- Eraser and whiteout
- Loose Leaf Paper
- Binder
- Calculator ([College Board Approved](#))

Course Overview

AP Biology is a rigorous, university-level course offered in high school, designed to be equivalent to a two-semester introductory biology course for students pursuing majors in life sciences—such as biochemistry, bioengineering, marine biology, forensics, anthropology, zoology, botany, and more. Rather than relying on rote memorization, this course emphasizes **conceptual understanding and application** through the AP Biology science practices. Students engage deeply with content, applying their knowledge to novel scientific questions through **inquiry-based laboratory investigations** that mirror real college-level scientific research.

Due to the vast scope of material and the limited timeframe, the course is **intense and fast-paced**, demanding strong organizational and time management skills. Students will use a **college-level textbook** and conduct **college-level labs**, preparing them for the academic challenges of higher education.

By the end of the year, students take the **AP Biology Exam**, a standardized test that can earn them **college credit or advanced placement** depending on their score and the policies of their chosen institution.

This course builds not only biological knowledge, but also critical thinking, problem-solving, and scientific communication skills—foundational tools for success in college and beyond.

Class Expectations

We are a TEAM in this class, and we take COLLECTIVE RESPONSIBILITY. As a member of our team, please be:

- **PREPARED.** This means: Coming to class prepared each day with all materials and with all assignments completed on time. Creating and implementing plans for completing independent work and for studying. Maintaining an organized binder/folder and lab notebook.
- **RESPECTFUL.** This means: Interacting with those in the classroom in a respectful, kind manner. Knowing that we are all different and valuing the power of that diversity in our abilities to learn from one another and grow together. Assuming that others have the best intentions and seeking to understand first. Disagreeing respectfully. Respecting the classroom property and materials at all times by keeping desk/lab station materials clean and orderly, and reporting any issues promptly to Ms. B.
- **ENGAGED.** This means: Actively learning by taking notes, doing assigned work, and giving full attention at all times while in class. **Removing ear buds upon entering class and keeping cell phones**

on silent and away in your bag at all times, unless permission has been given by Ms. B for a specific educational use. Participating actively in class discussions. Asking and answering questions. Staying on task and engaged and using time efficiently during labs and group work. Using laboratory materials and technology in ways that are safe and appropriate.

This is an AP level science course, taken by CHOICE. Personal responsibility and commitment to staying on pace with your independent work (homework and studying) is CRUCIAL to your success in this course! All work is expected to be turned in on time, by the deadline for the assignment.

Academic Dishonesty

You are expected to do your **own work, in your own words**, unless specifically told otherwise. Using work from **any source**—including classmates, the internet, or AI tools like ChatGPT—**without proper citation is academic dishonesty**.

This includes:

- Copying someone else's work
- Submitting AI-generated content as your own
- Sharing or copying lab data without permission
- Cheating on tests or quizzes
- Allowing others to copy your work

Academic dishonesty breaks trust and is **unethical and unacceptable**. While you may collaborate, your final work must reflect **your own understanding**. Assignments should **never** be word-for-word the same as someone else's.

Consequences may include:

- A **zero** on the assignment
- **Parent/administration notification**
- Additional disciplinary actions

Act with honesty and integrity—always.

Unit Descriptions

Unit	Big Idea Questions	Chapters in Textbook
1. Intro to AP Bio and Chemistry of Life	<p>What is the role of energy in the making and breaking of polymers?</p> <p>How do living systems transmit information in order to ensure their survival?</p> <p>How would living systems function without the polarity of the water molecule?</p>	1, 2, 3, 4, 5
2. Cell Structure and Function	<p>Defend the origin of eukaryotic cells.</p> <p>How do the mechanisms for transport across membranes support energy conservation? What are the advantages and disadvantages of cellular compartmentalization?</p> <p>How are living systems affected by the presence or absence of subcellular components?</p>	6, 7
3. Cellular Energetics	<p>How is energy captured and then used by a living system?</p>	8, 9, 10
4. Cell Communication and Cell Cycle	<p>In what ways do cells use energy to communicate with one another? Why and how do cells communicate?</p> <p>How does the cell cycle aid in the conservation of genetic information?</p> <p>How do different types of cells communicate with one another?</p>	11, 12
5. Heredity	<p>How is our understanding of evolution influenced by our knowledge of genetics?</p> <p>Why is it important that not all inherited characteristics get expressed in the next generation?</p> <p>How would Mendel's laws have been affected if he had studied a different type of plant?</p> <p>How does the diversity of a species affect inheritance?</p>	13, 14, 15
6. Gene Expression and Regulation	<p>How does gene regulation relate to the continuity of life?</p> <p>How is the genetic information of a species diversified from generation to generation?</p>	16, 17, 18, 19, 20, 21
7. Natural Selection	<p>What conditions in a population make it more or less likely to evolve?</p> <p>Scientifically defend the theory of evolution.</p> <p>How does species interaction encourage or slow changes in species?</p>	22, 23, 24, 25, 26, 27
8. Ecology	<p>How does diversity among and between species in a biological system affect the evolution of species within the system?</p> <p>How does the acquisition of energy relate to the health of a biological system? How do communities and ecosystems change, for better or worse, due to biological disruption?</p> <p>How does a disruption of a biological system affect genetic information storage and transmission?</p>	52, 53, 54, 55, 56

	How do organisms use energy or conserve energy to respond to environmental stimuli?	
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This course will fall under two semesters.

Semester 1: Successful students will receive a Biology 40S credit.

Final Mark - Course Evaluation Structure Semester 1:

- Unit/Term Work/Cumulative Tests/Quizzes – 80%
- Course Final - Exam - 20%

Semester 2: TBD

As this is the first year running AP Biology, semester 2 mark breakdown will be communicated at a later date.

May 2026 AP Biology Exam Weighting Per Unit Topic:

Unit 1: Chemistry of Life 8–11%

Unit 2: Cell Structure and Function 10–13%

Unit 3: Cellular Energetics 12–16%

Unit 4: Cell Communication and Cell Cycle 10–15%

Unit 5: Heredity 8–11%

Unit 6: Gene Expression and Regulation 12–16%

Unit 7: Natural Selection 13– 20%

Unit 8: Ecology 10–15%