**AP Biology Outline**

The AP Biology course is designed to offer students a solid curriculum in general biology concepts. By utilizing the big idea statements, enduring understandings, and science practices to guide biology instruction, students will develop an appreciation for the study of life.

The goal of instruction is to help students deepen their understanding of biological concepts, be able to apply all of the science practices, and prepare themselves for advanced studies in biology in the college and university settings. Labs and activities will provide diverse ways for students to learn and be confident in the application of this knowledge.

AP Biology is a rigorous and demanding course. Content will be covered in more depth and greater expectations will be placed on interpretation and analysis of information than previous biology courses. A significant amount of studying must be completed at home to allow time for discussion, labs and inquiry in class time.

The College Board has redesigned the curriculum starting in the 2013 school year, and although the amount of material has been reduced, the emphasis on scientific thinking and analytical thinking has increased. The new AP Biology curriculum encompasses 4 ‘big ideas’, with essential knowledge and process skill that support each one.

**Big Idea 1: Evolution**

* The process of evolution drives the diversity and unity of life

**Big Idea 2: Cellular Processes (Energy and communication)**

* Biological systems utilize free energy and molecular building blocks to grow.

**Big Idea 3: Genetics and Information Transfer**

* Living systems store, retrieve, transmit and respond to information essential to life processes

**Big Idea 4: Interactions**

* Biological Systems interact and these systems and their interactions possess complex properties.

**AP Exam Criteria:**

* 3 hours
* 90 minutes to complete: Part A: 63 multiple choice questions

Part B: 6 integrated science and math skill questions

* 10 minutes mandatory reading period
* 80 minutes to complete two long answer and six short answer free-response essay questions.
* Multiple choice questions/skill questions make up 50% of the exam mark, while free-response questions make up 50% of the exam mark

**Course AP Evaluations:**

* Up to an additional 5% on final grade
  + Based on quizzes, and completion of assignments and lab work
  + A summative evaluation on all AP content (i.e labs, course content, etc) – 5% of final course evaluation
  + All submitted work must meet level 3 (i.e 70% or higher) standard to be accepted for evaluation

**Grade 11 AP Biology:**

*AP Course Content:*

* Ecology
* Animal Behaviour
* Control of the Cell Cycle
* Gene linkage
* Probability (Laws of Multiplication and Addition)
* Chi-Square Analysis
* Population Genetics (Hardy-Weinberg Model)
* Construction of Cladograms

*Laboratories:*

* Cell Division: mitosis and meiosis
* Mendelian Genetics and Chi-Square Analysis
* Bioinformatics (BLAST)
* Hardy-Weinberg
* Transpiration \*

*these labs are inquiry-based investigations*

* Animal Behaviour \*

**Grade 12 AP Biology:**

*AP Course Content:*

* Immunology
* Cell to Cell Communication
* Statistical Analysis: Standard Deviation and Standard Error
* Q10 Temperature Coefficient

*Laboratories:*

* Enzyme Investigation
* Bacterial Transformation
* Photosynthesis (leaf disk assay) \*

*these labs are inquiry-based investigations*

* Diffusion/Osmosis (water potential) \*

***Laboratories in this course:***

The new AP curriculum includes more emphasis on inquiry based labs, which means that you will design your own experimental procedures for a significant number of labs.