**Grade 12 Biology (BI40S) Course Description**

The Grade 12 Biology course explores topics related to genetics and biodiversity. The course builds upon some of the topics taught in grades 9 and 10 science (it does not build upon Grade 11 Biology since grade 11 covers human anatomy and physiology).

**Course Modules:**

Below is a breakdown of the course topics:

**PART 1 - GENETICS**

**Unit 1 – Understanding Biological Inheritance**

Students explore various patterns and modes of inheritance. Through studying the concept of heredity from basic to complex genetic inheritance students will learn to predict, analyze, and explain the outcome of combining genes. Chromosomal mutations and aberrations are researched and discussed throughout this module.

**Unit 2 – Mechanisms of Inheritance**

Students study the role of DNA as the molecule of heredity. Examination of the Biology’s central dogma (progression of information from DNA to protein) is the central theme of this unit. Students will learn the impact of genetic mutations on DNA instructions as well as current developments in the field of biotechnology.

**PART 2 – BIODIVERISTY**

**Unit 3 – Evolutionary Theory**

Students will study the progression of biological evolutionary theory with emphasis on Charles Darwin’s contributions to this field. Students will be able to describe evolutionary change using comparative time scales and through measurement of changes in genetic frequencies.

**Unit 4 – Organizing Biodiversity**

Students appreciate the role of the evolutionary process in establishing the diversity of life on the planet. Students learn that various types of life are categorized based on similar characteristics and that alternative sampling and identification techniques are used to differentiate between these groups.

**Unit 5 – Conservation of Biodiversity**

Students will research the significance of maintaining biodiversity. Through the exploration of local species, students will develop of plan to support the conservation of these species in our environment.

**Evaluation:**

There are approximately 15 assignments. There are 4 tests (each unit has a test, and units 4 & 5 are tested together)

* Assignments – 40%
* Tests – 50%
* Final Exam – 10%

**Class Schedule:**

Due dates for assignments and tests are pre-scheduled to help students stay on track with the timing of the course. To stay on pace with the course, students can expect to spend about 1 hour each day learning the course content, and working through assignments and tests.

Each Module consists of multiple lessons that cover the content of the course. Lessons consist of content information and explanations, learning activities and practice exercises.

As students work through the course, they are encouraged to email their teacher if they have questions about any of the content or practice questions.

**Required Materials:**

Students will need the following:

* Computer with working camera/microphone
* Scientific calculator
* Pen/Pencil
* Eraser
* Paper