



### **CP Principles of Genetics**

This course develops a more in depth knowledge of the factors that control heredity, biotechnology associated with genetics, current and future applications of genetics, and the impact of this technology on society. The curriculum reinforces the basic concepts of science, such as heredity and its relationship to cellular processes, and provides the students with an overview of major biological principles. Examples of information included in the course are DNA structure and function, inheritance of traits, relationship between genes and proteins, the effects of mutations, and ethical considerations of genetic technology. Students need to be focused and self-motivated learners.

By the end of CP Principles of Genetics, students will meet the following standards:

#### **DNA Structure & Function:**

- Know the molecular structure of DNA and the basis of the genetic code
- Understand the process of DNA Replication
- Understand the process of Protein Synthesis
- Understand the causes and effects of genetic mutations

#### **Types of Inheritance:**

- Know the structure of chromosomes
- Understand the processes of Mitosis and Meiosis
- Understand the different types of Mendelian inheritance
- Understand the principles of Non-Mendelian inheritance
- Know the causes, symptoms, and treatments of many types of genetic disorders

#### **Genetic Technology & Society:**

- Understand the processes and uses of DNA analysis
- Understand the processes of prenatal screening
- Know the medical and practical uses of genetic information
- Understand the processes and uses of biotechnology
- Be able to evaluate the ethical concerns associated with genetic technology