

# Applied Biological Science



The following learning targets represent the major concepts studied and assessed in this course.

## **Semester 1:**

### **Unit 1: Genetics**

- Explain how genes are expressed in organisms.
- Describe what causes mutations in DNA.
- Identify the different types of mutations.

### **Unit 2: Transmission Genetics**

- Explain how traits are passed from parents to offspring.
- Explain the processes in each step of mitosis and meiosis.
- Explain how karyotyping and pedigrees can show how genetic traits are passed down over generations.

### **Unit 3: Genetic Technology**

- Explain how genetic technology has made possible because all organisms use the same DNA bases.
- Explain how genetic engineering has been used to treat genetic disorders.

## **Semester 2:**

### **Unit 4: Microbiology**

- Explain how different microorganisms can infect humans.
- Gram stain bacteria.
- Identify the major groups of bacteria.
- Identify the major types of virus.

### **Unit 5: Bacteria Transformation and Bacteria in Medicine**

- Explain how to insert different genes into bacteria.
- Describe how bacteria transformation has helped in the development of modern medical science.