

## **Bioprospecting Unit Objectives: by the end of this unit, students will be able to...**

- Define and provide examples of each of the following:
  - a. Anabolism
  - b. Catabolism
  - c. Products
  - d. Reactants
  - e. Catalysts
  - f. Enzymes
- Summarize how an enzyme affects a chemical reaction.
- Describe how an enzyme is created and what it is made from.
- Describe how an enzyme's function is determined.
- Define and explain the importance of the active site of an enzyme.
- Use the example of lactose and lactase to explain enzyme function.
- Describe the physical conditions in which an enzyme's function is increased or decreased.
- Define a polymer and monomer, and explain how cellulose is an example of a polymer.
- Summarize how the crystalline structure of cellulose affects the ability to conduct hydrolysis.
- Summarize the function of the following cellulase enzymes – endoglucanase, exoglucanase, and beta-glucosidase.
- Describe and explain the biochemical pathway in which cellulose is broken down into glucose.
- Define bioprospecting in your own words.
- Explain how bioprospecting could improve our ability to produce biofuels.
- Describe an example of bioprospecting and the benefits it has yielded.