

Biological and Pre-Professional Sciences Program at Carl Albert State College

Mission Statement:

The mission of the Biological and Pre-Professional Sciences AS Program at Carl Albert State College is to meet the general education requirements of the college and to provide students with the foundational scientific concepts common in the freshman and sophomore sequence of Biological and Pre-Professional Sciences. The program accomplishes this by providing practice in understanding the principles of living systems, problem solving skills, and appropriate laboratory methods.

Goals:

1. Provide graduates theory and practice in understanding the principles of living systems.
2. Provide graduates with practice in problem solving strategies.
3. Provide graduates opportunities to practice appropriate laboratory methods.

Program Outcomes:

1. Upon completion of the program the student will illustrate the basic molecular genetic processes of DNA replication and protein synthesis.
2. Upon completion of the program the student will demonstrate problem-solving strategies.
3. Upon completion of the program the student will perform safe and appropriate laboratory techniques.

Performance Indicators:

1. Upon completion of the program the student will illustrate the basic molecular genetic processes of DNA replication and protein synthesis.
 - A. Replicate a segment of DNA by determining the complimentary sequence of nitrogenous bases.
 - B. Transcribe mRNA from DNA by determining the sequence of mRNA that would result from a given sequence of DNA.
 - C. Translate mRNA to protein by determining the sequence of amino acids that would result from a sequence of mRNA.
2. Upon completion of the program the student will demonstrate problem-solving strategies.
 - A. Apply the appropriate equation to the problem.
 - B. Choose the correct value for each variable.
 - C. Solve the mathematical equation.
3. Upon completion of the program the student will perform safe and appropriate laboratory techniques.

- A. Apply appropriate personal protective equipment.
- B. Demonstrate proper laboratory hygiene.
- C. Demonstrate proper laboratory safety.