Course Description:

This is a 4 credit course that satisfies A.S. Biotechnology. The prerequisite for this course is successful completion of BSC 2420C. This course introduces students to modern concepts of molecular biology, with a laboratory focus on basic methods for preparing and analyzing nucleic acids. Emphasis will be on techniques required for RNA purification and manipulation.

Course Performance Standards:

At the successful completion of this course, the student should be able to:

1. Demonstrate an understanding of the scientific method
2. Demonstrate an understanding of scientific modeling such as formulas, graphs, tables and schematic drawings
3. Perform RNA extraction and purification
4. Quantitative RNA and determine its purity.
5. Carry out RNA electrophoresis
6. Demonstrate several methods for RNA detection (e.g. hybridization to a nucleic acid probe or affinity chromatography).
7. Synthesize microarrays and use them to detect specific macromolecules.
8. Perform Northern blot analysis
9. Produce a cDNA library.
10. Screen a cDNA library for the presence of specific gene sequences.
11. Become familiar with the concept of interfering RNA.
12. List the types of RNA found in a typical cell.
13. Describe the process or RNA transcription.
14. Demonstrate understanding of regulation of gene expression at the level of transcription.