BSC 2420C
Introduction to Biotechnology Methods

Course Description:
This is a 4 credit combination laboratory and lecture course that satisfies requirements for A.S. Biotechnology. The prerequisites for this course are successful completion of BSC 1421 and BSC 2010. This course includes basic concepts and techniques necessary to work effectively in a biotechnology laboratory. Basic skills learned will include: following procedures and keeping records; laboratory safety procedures for biological, chemical, and radiological hazards; laboratory mathematics and measuring; preparing solutions; and basic techniques used for the separation of biomolecules. Emphasis will be on DNA manipulation techniques. Students will develop confidence in their ability to work safely with proficiency in the use of basic biotech lab instruments.

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

1. Maintain appropriate documentation of experimental work
2. Perform standard laboratory procedures in a safe and efficient manner.
3. Utilize sterile technique.
4. Accurately measure and transfer chemicals.
5. Accurately prepare biochemical reagent solutions.
6. Extract and purify both genomic and plasmid DNA and determine quantity and purity of DNA samples.
7. Effectively use restriction endonucleases to analyze DNA.
8. Effectively use restriction endonucleases to manipulate DNA and construct plasmids.
9. Transform bacterial cells with plasmid DNA
10. Perform Southern blot analysis of DNA digests
11. Perform both analytical and preparatory DNA electrophoresis
12. Perform polymerase chain reaction amplification of targeted DNA sequences.
13. Perform site directed mutagenesis on targeted DNA sequences.