

## **Biotechnology Technician – Certificate**

### **Course Descriptions**

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#### **BIO 259** Cell Biology

**Credits:** 4

**Prerequisites:** BIO 107

This course focuses on the structure and function of cells. Topics include organelles, membrane function, metabolism, and regulation of growth as well as collection, analysis, and documentation methods. Students explore laboratory instrumentation, cellular techniques, and manipulations employed in the biotechnology industry.

#### **CHM 105** General Chemistry I

**Credits:** 4

**Prerequisites:** CHM 090 or one year of High School Chemistry, MAT 099 or appropriate placement score.

This course focuses on the classification of matter and the behavior and characteristics of chemicals in the natural world. Topics include the basic structure of the atom, nuclear chemistry, nomenclature of chemicals, chemical reactions, the mole concept, stoichiometry, acid-base concepts, the concentration units of solutions and the gas laws. The laboratory portion of the course fosters basic laboratory skills and reinforces lecture concepts.

#### **CHM 105L** General Chemistry I LAB

**Credits:** 0

#### **CIS 111** Intro to Microcomputer Applications

**Credits:** 3

This course focuses on basic working knowledge and hands-on experiences in word processing, spreadsheet processing, database processing, and presentation software. Students acquire an overview of computer concepts, the most common business office operating systems, the Internet, and the World Wide Web.

#### **BIO 260** Molecular Biology

**Credits:** 4

**Prerequisites:** BIO 107

This course focuses on the principles of molecular biology and associated laboratory techniques. Topics include the structure and function of nucleic acids including replication, protein synthesis and sorting, and gene regulation. Students learn data collection, analysis, and documentation. The laboratory component focuses on recombinant DNA and its manipulation.

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**BIO 231** General Microbiology

**Credits:** 4

**Prerequisites:** BIO 107

This course explores the morphology, growth, metabolism, and genetics of microorganisms including bacteria, fungi, and viruses. Topics include microbial growth, identification, genetic manipulation techniques used in the biotechnology industry, pathogenicity, disease transmission, and immunology. The course emphasizes documentation, data manipulation, and experimental design.

**BTT 201** Techniques in Biotechnology

**Credits:** 6

**Prerequisites:** BIO 159, BIO 160, BIO 231

This course provides biotechnology students with an understanding of a good manufacturing practices environment. They will develop specific skills in such areas as formulation of solutions, operation of specific basic laboratory equipment, sterile operations, quality control knowledge and operation of utilities and environmental controls, as well as appropriate use of documentation. Students will also participate in a simulated manufacturing environment/laboratory utilizing good manufacturing practices.

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