

BIOTECHNICIAN CURRICULUM

CERTIFICATE OF ACHIEVEMENT, BIOTECHNICIAN (34 - 37 SEMESTER CREDITS)

Program Description: Biotechnology is the use of living cells or organisms to produce a product or to improve plants, animals or microorganisms. The applications of biotechnology include pharmaceuticals, agriculture, the diagnosis and prevention of disease, vaccines, forensics and bioremediation. This program is designed to prepare students for employment in Biotechnology industry and research. Students will learn basic laboratory skills, equipment operation and maintenance, quality control, safety and good manufacturing practices.

Program Student Learning Outcomes: Upon successful completion of this program, the student should be able to:

- Perform highly technical procedures such as cell counting, DNA extraction and characterization, cloning, PCR, ELISA and other immunological techniques, maintenance of cell lines, protein isolation and purification.
- Conduct research experiments following operation and safety protocols and apply knowledge of theory and techniques sufficient to troubleshoot appropriately.
- Analyze and display data using computer technology.
- Manage laboratory activities, including record keeping, ordering supplies and preparing reports.
- Apply successful problem solving skills in working with biological, chemical or radioactive hazards.

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Course	Title	Cr
General Education Requirements (9-10 credits)		
ENG 100 or ENG 160	Composition I Business and Technical Writing	3
MATH 103 or higher level mathematics	Fundamentals of College Algebra	3
BIOL 130 or BIOL 171	Anatomy and Physiology General Biology I	3-4
Other Science Requirements (11-13 credits)		
CHEM 161	General Chemistry I	3

CHEM 161L	General Chemistry I Lab	1
CHEM 162	General Chemistry II	3
CHEM 162L	General Chemistry II Lab	1
CHEM 272/272L or MLT 112	Organic Chemistry I/Organic Chemistry I Lab Clinical Biochemistry I	3 - 5
Medical Laboratory Technician Requirements (2 credits)		
MLT 100	Introduction to the Clinical Laboratory	2
Microbiology Requirements (12 credits)		
MICR 130 or MICR 135	General Microbiology Microbiology for the Health Professions	3
MICR 140 or MLT 107	General Microbiology Laboratory Clinical Microbiology I	2
MICR 161	Immunology and Protein Chemistry	2
MICR 230	Molecular Biology	3
MICR 240	Cell Biology and Tissue Culture	2
TOTAL		34 - 37
<i>The issuance of a Certificate of Achievement requires that the student must earn a grade point ratio (GPR) of 2.0 or higher for all courses required in the certificate.</i>		