

BIOLOGICAL TECHNOLOGY – ASSOCIATE IN SCIENCE DEGREE, CERTIFICATE OF ACHIEVEMENT

Top Code:

0430.00

The curriculum prepares students to work in entry level positions in the field of biotechnology in high-tech industry and research institutions. This is an interdisciplinary program including courses and practical training in math, chemistry, biology, computer skills, and English. Emphasis is placed on program participants developing competency for working in a laboratory environment, including; performing basic and advanced laboratory techniques; collecting, documenting, and analyzing data; and participating in short-term independent projects. Fundamental skills and workplace competencies necessary for successful employment in the biotechnology industry and in research laboratories are also emphasized.

Students are kept informed on current advances in biotechnology by guest speakers and internet assignments to access relevant technical resources and recently published scientific articles.

This program offers classroom instruction in a working laboratory setting and assistance in finding appropriate internships. Students must be willing to spend time working on long term projects and participating in outreach programs. Students must be able to provide their own transportation to an internship site.

Employment opportunities include positions in: biomedical industry, academic research institutes, pharmaceutical companies, agriculture, and food science genetic engineering laboratories.

Students who have previously completed coursework required for the Certificate of Achievement and need only the Biology 102A–D courses may take a “fast track” and complete the certificate in 1 year.

A Certificate of Achievement is awarded upon completion of all required courses with a grade of C or better.

Program Outcomes

- Understand, interpret and write laboratory documents, SOPs, protocols and notebook documentation.
- Be able to use, maintain, calibrate and/or validate standard laboratory equipment.
- Be prepared for entry-level technician positions in the biological technology industry and in research laboratories.

Requirements for the Certificate of Achievement

Code	Title	Units
Semester I		
BIOL 010A	CELLULAR BIOLOGY, GENETICS AND EVOLUTION	5

BIOL 102A	BIOLOGICAL TECHNOLOGY - BASIC TECHNIQUES	3
CHEM 001B	GENERAL CHEMISTRY AND CHEMICAL ANALYSIS	5
ENGL 001A	READING AND COMPOSITION	4
	or ENGL 001AHHONORS READING AND COMPOSITION	
Semester II		
BIOL 010B	THE DIVERSITY OF LIFE ON EARTH: STRUCTURE, FUNCTION AND ECOLOGY	4
BIOL 102B	BIOLOGICAL TECHNOLOGY - ADVANCED TECHNIQUES	3
BIOL 102C	BIOLOGICAL TECHNOLOGY - CELL CULTURE TECHNIQUES	3
Semester III		
CHEM 008A	ORGANIC CHEMISTRY I	5
MICR 002	MICROBIOLOGY	4
	or BIOL 104B MICROBIOLOGICAL APPLICATIONS USED IN BIOTECHNOLOGY	
	Select one of the following:	4
STAT 018	STATISTICS FOR BEHAVIORAL AND SOCIAL SCIENCES	
STAT 050	ELEMENTARY STATISTICS	
STAT 050H	HONORS ELEMENTARY STATISTICS	
Semester IV		
BIOL 010C	GENETICS	3
PHSC 002	SCIENTIFIC METHOD AS CRITICAL THINKING	3
Summer		
BIOL 102D	BIOLOGICAL TECHNOLOGY - LABORATORY INTERNSHIP	3
Total Units		49

Recommended Electives

Code	Title	Units
BIOL 104A	APPLICATIONS OF FLUORESCENCE MICROSCOPY	2
BIOL 104C	RESEARCH METHODOLOGY	3
BIOL 104D	COLLABORATIVE RESEARCH EXPERIENCE	3

Visit the Program Mapper (<https://pasadena-city.programmapper.ws/academics/interest-clusters/35afad1b-8598-4ecf-a320-0ed4834a7df8/programs/21fc856b-2ee6-f1ff-90ef-558896e79f84/>) for a suggested sequence of courses

General Education Requirements for the Associate in Science Degree

- General Information (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/>)
- PCC Local Gen Ed (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#pcclocaltext>)
- CSU Breadth (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#csubreadthtext>)
- IGETC (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#igetctext>)