

BIOLOGICAL TECHNOLOGY – STEM CELL-BASED BIOMANUFACTURING – ASSOCIATE IN SCIENCE DEGREE, CERTIFICATE OF ACHIEVEMENT

Top Code:

0430.00

Recommended Preparation: BIOL 110 or equivalent, CHEM 022 or equivalent

The Biological Technology - Stem Cell-Based Biomanufacturing curriculum is designed to prepare students to work in the biotechnology industry by providing instruction and training in basic and advanced laboratory procedures as well as specialized training in stem cell culture techniques and biomanufacturing processes. Emphasis is placed on program participants developing the necessary employability skills and competency for working in a laboratory environment, specifically in biomedical and academic laboratories performing research in the emerging field of regenerative medicine biomanufacturing.

The program offers classroom instruction in a laboratory setting and cell culture facility equipped for biomanufacturing training and assistance in finding appropriate on-site internships providing practical work-based experience in the biotechnology industry. Students must be able to provide their own transportation in the final semester(s) to an internship site. Employment opportunities include: biomedical industry, academic research institutions, pharmaceuticals companies, and genetic engineering laboratories.

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

Program Outcomes

- Evaluate and write laboratory documents including SOPs, protocols, and notebook documentation following good documentation practices.
- Use, maintain, calibrate and/or validate standard laboratory equipment to perform stem cell-based biomanufacturing and related bioprocessing techniques adhering to safety and regulatory guidelines.
- Demonstrate laboratory techniques for collecting, documenting, and analyzing data for entry-level technician positions in stem cell-based biomanufacturing facilities in the biomedical industry and in research institutes.

Requirements for the Certificate of Achievement

Code	Title	Units
BIOL 102A	BIOLOGICAL TECHNOLOGY - BASIC TECHNIQUES	3
CHEM 001A	GENERAL CHEMISTRY AND CHEMICAL ANALYSIS I	5
BIOL 102B	BIOLOGICAL TECHNOLOGY - ADVANCED TECHNIQUES	3
BIOL 102C	BIOLOGICAL TECHNOLOGY - CELL CULTURE TECHNIQUES	3
BIOL 038	CELL AND MOLECULAR BIOLOGY	4
BIOL 010A	CELLULAR BIOLOGY, GENETICS AND EVOLUTION	5
BIOL 003	HUMAN BIOLOGY	3-4
or BIOL 039	MODERN HUMAN GENETICS	
or BIOL 010C	GENETICS	
BIOL 104E	SPECIALIZED TECHNIQUES AND INSTRUMENTATION IN BIOTECHNOLOGY	1
BIOL 104F	STEM CELL-BASED BIOMANUFACTURING	3
BIOL 102D	BIOLOGICAL TECHNOLOGY - LABORATORY INTERNSHIP	3
Total Units		33-34

Visit the Program Mapper 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>)