

BIOTECHNOLOGY II: BIOMANUFACTURING (CERT)

CERTIFICATE OF ACHIEVEMENT

Biomanufacturing combines the concepts of manipulation and use of biological systems explored in the biotechnology industry with the carefully monitored practices of large-scale production of the manufacturing industry. Products of the biomanufacturing industry include biopharmaceuticals, vaccines, monoclonal antibodies, growth factors, beer, new food, biofuels, etc. The certificate of achievement in biomanufacturing will develop the skills students need for entry-level jobs in the biomanufacturing industry, including manufacturing production technicians, quality control technicians, and environmental monitoring technicians. This certificate builds on the course sequence of the Level 1 Biotechnology: Wet Lab Skills certificate and provides students the option of pursuing an Associate of Science Degree in Biotechnology.

Program Student Learning Outcomes

- Safely operate and troubleshoot standard biomanufacturing equipment and instrumentation.
- Aseptically grow and maintain microbial cell cultures.
- Explain and apply the processes in the biomanufacturing industry.
- Understand and distinguish between the different types of documents used in the industry for recording and maintaining data and procedures and apply the principles of Good Documentation Practices when working with these documents.
- Explain and follow the guidelines outlined in Good Manufacturing Practices and Good Laboratory Practices.
- Perform and understand the concepts of techniques involving nucleic acid and protein purification and separation.

Program Requirements

Code Number	Course Title	Units
Required Courses		
BIOL 201	Principles of Biology	5.0
CHEM 111	General Chemistry	5.0
BTEC 150	Biomanufacturing Fundamentals	4.0
BTEC 180	Quality and Regulatory Affairs in Biotechnology	3.0
Total Units		17