



# Program Planning Guide

## Biotechnology - Bioprocess Manufacturing Technology, Certificate (C20100)

**Program Length:** 3 semesters

**Program Sites:** Lee Main Campus; Distance Education - some courses may be available online or hybrid

**Career Pathway Options:** Associate in Applied Science Degree in Biotechnology - Bioprocess Manufacturing Technology

Suggested Course Schedule		Class	Lab	Work	Credits	Notes:
<b>1st Semester (fall)</b>						
BPM 110	Bioprocess Practices	3	4	0	5	BIOWORK
PTC 110	Industrial Environment	3	0	0	3	BIOWORK
	<b>Total Semester Hours</b>	6	4	0	8	
<b>2nd Semester (spring)</b>						
BPM 111	Bioprocess Measurements	3	3	0	4	
BIO 110	Principles of Biology	3	3	0	4	
	<b>Total Semester Hours</b>	6	6	0	8	
<b>Total Semester Hours Required for Graduation: 16</b>						



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## Course Descriptions

**BIO 110 Principles of Biology**

*Corequisite: DRE 098 or appropriate placement test scores*

This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. This course has been approved for transfer under the CAA and ICAA as a universal general education transfer component (UGETC) course in Natural Sciences.

**BPM 110 Bioprocess Practices**

This course provides a study of plant operations including various plant utility systems and detailed study of the varied plant environments in a bioprocessing facility. Emphasis is placed on quality mindset and principles of validation through applications of monitoring procedures. Upon completion, students should be able to demonstrate the rigors of industry regulation and its necessity.

**BPM 111 Bioprocess Measurements**

Prerequisites: Take BPM 110

This course covers a variety of physical measurements. Emphasis is placed on pH, temperature, pressure and flow rates, as well as spectrophotometry, and biochemical and chemical analysis methods. Upon completion, students should be able to demonstrate and perform many aspects of process monitoring.

**PTC 110 Industrial Environment**

This course introduces the pharmaceutical industry, including a broad overview of work in this field. Emphasis is placed on good manufacturing practices (GMP), work conduct, company organization, job expectations, personal safety, hygiene, and company rules and regulations. Upon completion, students should be able to follow good manufacturing practice regulations and inspect a pharmaceutical manufacturing facility for compliance with GMP.