

# APPLIED ENGINEERING & TECHNOLOGIES

## BIOPHARMACEUTICAL TECHNOLOGY

### Biopharmaceutical Technology Degree - A20180

The Biopharmaceutical Technology curriculum is designed to prepare graduates for employment in pharmaceutical manufacturing and related industries, including chemical quality assurance, microbiological quality assurance, product inspection, documentation review, manufacturing, and product/process validation.

#### Program Sequence

##### First Semester

BPM 110	Bioprocess Practices	5
CIS 110	Introduction to Computers	3
ENG 111	Writing and Inquiry	3
ISC 121	Environmental Health & Safety	3
PTC 110	Industrial Environment	3

##### Second Semester

BIO 110	Principles of Biology	4
CHM 131	Introduction to Chemistry	3
CHM 131A	Introduction to Chemistry Lab	1
MAT 121	Algebra/Trigonometry I	3
PTC 120	Pharmaceutical Quality Control	4
	English/Communication Elective	3

##### Third Semester

	Major Elective	2
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##### Fourth Semester

CHM 132	Organic and Biochemistry	4
ELN 260	Prog Logic Controllers	4
ISC 278	cGMP Quality Systems	2
MNT 110	Intro to Maintenance Procedures	2
PTC 212	Applied Microbiology	4

##### Fifth Semester

HUM 110	Technology and Society	3
ISC 280	Validation Fundamentals	2
MNT 270	Bioprocess Equipment Maintenance	2
PTC 210	Pharmaceutical Industrial Processes	4
	Social Science Elective	3

##### English/Communication Electives

(Select 3 hours from the following courses):

ENG 112	Writing and Research in the Disciplines	3
ENG 114	Professional Research & Reporting	3

##### Social Science Electives

(Select 3 hours from the following courses):

PSY 118	Interpersonal Psychology	3
PSY 150	General Psychology	1

##### Major Electives

(Select 2 hours from the following courses):

BTC 150	Bioethics	3
WBL 112	Work-Based Learning I	2

**Graduation Requirements** ..... 67 Credit Hours

### Pharmaceutical Basics Certificate - C20180E

The courses in this certificate provide instruction on the basics of pharmaceutical manufacturing, the environment, quality, and bio-processes.

#### Program Sequence

##### First Semester

BPM 110	Bioprocess Practices	5
PTC 110	Industrial Environment	3

##### Second Semester

PTC 120	Pharmaceutical Quality Control	4
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**Graduation Requirements**..... 12 Credit Hours

### BioMaintenance Certificate - C20180F

This certification provides instruction on maintenance procedures and equipment control. Emphasis is placed on cGMP, OSHA regulations, and manufacturing processes applicable to the biopharmaceutical industry.

#### Program Sequence

##### First Semester

BPM 110	Bioprocess Practices	5
PTC 110	Industrial Environment	3
MNT 110	Intro to Maintenance Procedures	2

##### Second Semester

ELN 260	Prog Logic Controllers	4
PTC 120	Pharmaceutical Quality Control	4

**Graduation Requirements**..... 18 Credit Hours

### BioQuality Certificate - C20180G

This certification provides instruction on quality concepts. Emphasis is placed on quality control and assurance, validation, and bioprocessing practices applicable to the biopharmaceutical industry.

#### Program Sequence

##### First Semester

BPM 110	Bioprocess Practices	5
MNT 110	Intro to Maintenance Procedures	2
PTC 110	Industrial Environment	3

##### Second Semester

ELN 260	Prog Logic Controllers	4
MNT 270	Bioprocess Equipment Maintenance	2

**Graduation Requirements**..... 16 Credit Hours