

BIOTECHNOLOGY SPECIALIZATION, CERTIFICATE

Certificate in Biotechnology Specialization (420008C)

Chemical Engineering students may choose to specialize in biotechnology. The goal of this program is to allow engineering students with an interest in chemistry and biotechnology to develop suitable preparation for careers or graduate study in biotechnology or the medical fields without reducing their potential for careers in traditional chemical engineering. Students will have ample opportunity to work with researchers in biotechnology through their engineering and design electives.

The following information has official approval of the **Department of Chemical, Biomolecular and Corrosion Engineering** and the **College of Engineering and Polymer Science**, but is intended only as a guide. Completion of this certificate is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.

The following courses constitute a "Certificate in Biotechnology Specialization" and must be completed with a minimum grade point average of 2.0 overall for the certificate to be noted on the student's record.

Summary

Code	Title	Hours
Required Courses		15
Electives		6
Total Hours		21

Required Courses

Code	Title	Hours
3100:111	Principles of Biology I	4
3100:112	Principles of Biology II	4
3100:311	Cell & Molecular Biology	4
or 3100:331	Microbiology	
3150:401	Biochemistry Lecture I	3
Total Hours		15

Electives

Code	Title	Hours
<i>Chemical and Biomolecular Engineering Electives</i>		
Select three credits of the following:		3
4200:194	Chemical Engineering Design I	
4200:294	Chemical Engineering Design II	
4200:394	Chemical Engineering Design III	
4200:472	Separation Processes in Biochemical Engineering	
4200:473	Bioreactor Design	
4200:494	Design Project	

4200:496	Topics in Chemical Engineering	
4200:497	Honors Project	
4200:499	Research Project: Chemical Engineering	
4800:360	Biofluid Mechanics	
4800:300	Biomaterials	
<i>Design Electives</i>		
Select three credits of the following:		3
4200:294	Chemical Engineering Design II	
4200:394	Chemical Engineering Design III	
4200:473	Bioreactor Design	
4200:494	Design Project	
4200:496	Topics in Chemical Engineering	
4200:497	Honors Project	
4200:499	Research Project: Chemical Engineering	
4300:482	Special Projects: Civil Engineering	
4800:485	Special Topics in Biomedical Engineering	
Total Hours		6