BIOTECHNOLOGY MINOR

Minor Requirements and Curriculum

The minor must be completed prior to, or at the same time as, the requirements for the bachelor's degree. A major and a minor may not be taken in the same degree program, and a minor is not required for a degree. Requirements for the minor include:

- At least half of the units must be from upper-division courses (3000-4000 level).
- At least half of the units must be taken at Cal Poly (in residence).
- No more than one-third of the units will be taken with credit-no credit grading (CR/NC), not counting courses with mandatory CR/NC. Departments may further limit CR/NC grading if desired.
- A minimum 2.0 GPA is required in all units counted for completion of the minor.

Code	Title	Units
REQUIRED COURSES		
BIO/CHEM 2252	Orientation to Biotechnology	2
Intro Cell Biology		
Select from the following:		4
BIO 1151	Life: Molecules and Cells	
BOT 1121	General Botany	
MCRO 2221	Introduction to Microbiology	
or MCRO 2224	General Microbiology I	
Genetics/Molecular Biology		
Select from the following:		3-4
BIO 3312	Human Genetics	
BIO 3351	Principles of Genetics	
CHEM 3356	Genetic Information Processing	
MCRO 3351	Microbial Genetics	
Biochemistry		
CHEM 3350	Biochemistry: Fundamentals and Applications	4
or CHEM 3352	Biochemistry	
Applied Molecular Biology		
Select from the following:		2-3
ASCI 4403	Applied Biotechnology in Animal Science	
BIO 4457	Molecular Biology Laboratory	
CHEM 4453	Molecular Biology Techniques	
CHEM 4454	Protein Techniques	
Approved Electives		
Select from the following:		5-6
Animal Biotechnology		
ASCI 4403	Applied Biotechnology in Animal Science	
ASCI 4406	Animal Embryology and Assisted Reproduction	
ASCI 4440	Immunology and Diseases of Animals	
DSCI 3330	Dairy Cattle Reproductive Management and Artificial Insemination	
Bioinformatics		
BIO/CHEM 4451	Bioinformatics Applications	
CSC 4448	Bioinformatics Algorithms	
Cell/Molecular/Biotechnology		
BIO 4456	Immunology	
BIO 4452	Cell Biology	
BIO 4457	Molecular Biology Laboratory	
BMED 3360	Cellular Immunotherapy	
CHEM 4450	Nutritional Biochemistry	
CHEM 4453	Molecular Biology Techniques	

CHEM 4454	Protein Techniques
MCRO 2224	General Microbiology I
MCRO 3320	Emerging Infectious Diseases
MCRO 3352	Microbial Genetics Laboratory
MCRO 4402	General Virology
MCRO 4433	Microbial Biotechnology
Engineering-related	
BMED 3362	Regenerative Medicine Therapies
BRAE 4448	Bioconversion
ENVE 4443	Bioremediation Engineering
Ethics	
PHIL 3339	Biomedical Ethics
or PHIL 3341	Professional Ethics
Pharmaceutical Biotechnology	
BMED 4480	Drug Discovery and Development
CHEM 4457	Chemistry of Drugs and Poisons
Plant Biotechnology	
PLSC 3323	Plant Pathology
Total Units	**21**