

# Curriculum

## B.S. Degree in Biochemistry and Biotechnology (82-89 Required Course Credits)

*Students are required to fulfill the core courses listed below and will be required to fulfill the additional requirements for either the Biological Chemistry Emphasis or the Cellular and Molecular Sciences Emphasis*

### CORE REQUIRED BIOCHEMISTRY AND BIOTECHNOLOGY COURSES (57-58 Credits)

<u>Course #</u>	<u>Course Title</u>	<u>Credit</u>	<u>DragonCore (N/Y)</u>	
<b>Required Courses</b>				
BIOL 111	Cell Biology	4	N	
BIOL 341	Genetics	4	N	
BIOL 385	Molecular Biology	3	N	
BIOL 385L	Biology 385 Lab	1	N	
CHEM 150	General Chemistry I	4	Y	4L
CHEM 150L	General Chemistry Laboratory	0	Y	4L
CHEM 210	General Chemistry II	4	N	
CHEM 210L	General Chemistry II Laboratory	0	N	
CHEM 350	Survey of Organic Chemistry	3	N	
CHEM 355	Organic Chemistry Laboratory	1	N	
CHEM 360	Survey of Organic Chemistry II	3	N	
CHEM 365	Organic Chemistry Laboratory II	1	N	
CHEM 380	Analytical Chemistry	4	N	
CHEM 400	Biochemistry I	3	N	
CHEM 405	Biochemistry Laboratory I	1	Y	W
CHEM 410	Biochemistry II	3	N	
CHEM 415	Biochemistry Laboratory II	1	N	
BCBT 475	Biotechnology: Research & Communication I	2	Y	W
BCBT 476	Biotechnology: Research & Communication II	2	N	
MATH 261	Calculus I	4	Y	3, 3M
<b>Select Three of the following Biotechnology Technique courses:</b>				
BCBT 477	Proteomics	2	N	
BCBT 478	Plant and Mammalian Tissue Culture	2	N	
BCBT 479	Advanced DNA & RNA Methodology	2	N	
BCBT 480	Integrative Physiology & Surgical Instrumentation	2	N	
BCBT 481	Fluorescence Detection and Quantification	2	N	
BCBT 482	Biofuels	2	N	
BCBT 483	Topics in Biotechnology Techniques	2	N	
<b>Select One of the following Physiology Courses:</b>				
BIOL 349	Human Physiology	4	N	
BIOL 347	Plant Physiology	3	N	
BIOL 360	Cellular and Molecular Physiology	4	N	

## BIOLOGICAL CHEMISTRY EMPHASIS REQUIREMENTS (25-26 Credits)

### Required Courses

CHEM 300	Inorganic Chemistry I	3	N	
CHEM 450	Physical Chemistry I	3	N	
CHEM 455	Physical Chemistry Laboratory I	1	N	

### Select ONE of the following physical chemistry area courses:

CHEM 460	Physical Chemistry II	3	N	
BCBT 450	Molecular & Biophysical Chemistry	3	N	

### Select ONE of the following Bioscience Restricted Electives:

BIOL 115	Organismal Biology	4	Y	4L
BIOL 323	Human Anatomy	4	N	
BIOL 305	General Botany	4	N	
BIOL 321	Invertebrate Zoology	3	N	
BIOL 345	Principles of Ecology	4	N	
BIOL 347	Plant Physiology	3	N	
BIOL 349	Human Physiology	4	N	
BIOL 348	Evolutionary Biology	3	N	
BIOL 350	Microbiology	4	N	
BIOL 360	Cellular and Molecular Physiology	4	N	
BIOL 365	Developmental Biology	4	N	
BIOL 372	Aquatic Biology	4	N	
BIOL 402	Princ of Animal Behavior	3	N	
BIOL 430	Immunobiology	4	N	

### Related Requirements

Math 262	Calculus II	4	N	
PHYS 200	General Physics I	4	Y	4, 4L, 4M
PHYS 201	General Physics II	4		

## CELLULAR AND MOLECULAR SCIENCES EMPHASIS (28-31 Credits)

### Required Courses

BIOL 115	Organismal Biology	4	Y	4L
BCBT 450	Molecular & Biophysical Chemistry	3	N	

### Select THREE of the following Bioscience Restricted Electives:

BIOL 323	Human Anatomy	4	N	
BIOL 305	General Botany	4	N	
BIOL 321	Invertebrate Zoology	3	N	
BIOL 345	Principles of Ecology	4	N	
BIOL 347	Plant Physiology	3	N	
BIOL 348	Evolutionary Biology	3	N	
BIOL 349	Human Physiology	4	N	
BIOL 350	Microbiology	4	N	
BIOL 360	Cellular and Molecular Physiology	4	N	
BIOL 365	Developmental Biology	4	N	
BIOL 372	Aquatic Biology	4	N	
BIOL 402	Princ of Animal Behavior	3	N	
BIOL 430	Immunobiology	4	N	
BIOL 455	Wildlife Ecology	4	N	

### Related Requirements

Math 262	Calculus II	4	N	
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### OR

Math 244	Applied Biostatistics	4	Y	3M, 3
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PHYS 200	General Physics I (AND)	4	Y	4, 4L, 4M
PHYS 201	General Physics II	4	N	

### OR

PHYS 160	College Physics I (AND)	4	Y	4, 4L, 4M
PHYS 161	College Physics II	4		

