DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY
UNIVERSITY OF ARIZONA, COLLEGE OF SCIENCE

B.S. IN BIOCHEMISTRY
CATALOG: FALL 2024 to SPR 2025

Name:

SID:

GENERAL EDUCATION REQUIREMENTS

English Composition

ENGL 101 or 107	3
ENGL 102 or 108	3
Or	
ENGL 109H	3

Second Language

2nd Semester Proficiency or higher	4-5

Introduction to General Education

UNIV 101	1

Exploring Perspectives

Artist	3
Humanist	3
Natural Scientist *(fulfilled by CHEM 181 or PHYS 141)*	
Social Scientist	3

Building Connections

Course 1	3
Course 2	3
Course 3	3

General Education Portfolio

UNIV 301	1

FOUNDATIONAL MATH & SCIENCE

Mathematics

MATH 122A & B or MATH 125 – *Calculus I*	3-5
MATH 129 – *Calculus 2*	3
CHEM 380 (F) or MATH 254 or MATH 223 – *Calculus III*	3-4

Biology

MCB 181R – *Intro Biology 1*	3
MCB 181L – *Intro Biology Lab 1*	1
ECOL 182R – *Intro Biology 2*	3
ECOL 182L – *Intro Biology Lab 2*	1

Physics

PHYS 140 or 141 or 161H – *Intro Mechanics*	4
PHYS 240 or 241 or 261H – *Intro Electricity & Magnetism*	4

General Chemistry

CHEM 181 – *General Chemistry 1*	4
CHEM 182 – *General Chemistry 2*	4

BIOCHEMISTRY MAJOR REQUIREMENTS *(C or higher required)*

CBC Majors First-Year Colloquium

CHEM 195A (F)	1

Organic Chemistry

CHEM 241A – *Organic Chemistry 1*	3
CHEM 243A – *Organic Chemistry 1 lab*	1
CHEM 241B – *Organic Chemistry 2*	3
CHEM 243B – *Organic Chemistry 2 lab*	1

Biochemistry Core

BIOC 296B – *Intro to Biochem Research*	1
BIOC 462A (F) – *Biochemistry 1*	4
BIOC 462B (S) – *Biochemistry 2*	4
BIOC 463A – *Biochem Lab Techniques*	4
BIOC 498(H) – *Sr Capstone/Thesis*	3/3

Physical Chemistry

CHEM 480A (F) – *Physical Chemistry 1*	3
CHEM 480B (S) – *Physical Chemistry 2*	3

Biochemistry Electives *(4 units minimum)*

See Page 2 for complete electives list

Course 1	3
Course 2	3

GRADUATION REQUIREMENTS

Graduation Requirements

Total Units: 120

Upper-Division Units: 42

Cumulative GPA: 2.000+

Major GPA 2.000+

Mid-Career Writing Assessment (MCWA)

Units in Residence @ UA: 30+

Upper-Division Units @ UA: 18+

Biochemistry Electives *(6 units minimum)*

BIOC 395B (MARC program only) – *Scientific Writing*	1
BIOS 376 (cannot also receive credit for MATH 263) – *Intro. to Biostats*	3
BME 486 (F) – *Biomaterial-Tissue Interactions*	3
CHEE 377 (F) – *Microbiology for Engineers*	3
CHEM 325 (F) – *Analytical Chemistry*	2
CHEM 326 (F) – *Analytical Chemistry Lab*	2
CHEM 405A (S) – *Basic Lab Safety*	1
CHEM 405B (S) – *Advanced Lab Safety*	1
CHEM 405C (S) – *Chemical Hygiene & Regulations*	1
CHEM 450 (F) – *Synthetic & Mechanistic Organic Chemistry*	3
ECOL 320(H) (F, SS) – *Genetics*	4-5
ECOL 326 (F, SS) – *Genomics*	3
ECOL 346 – *Bioinformatics*	4
ENVS 474 (F) – *Aquatic Plants & the Environment*	4
ENVS 477 (S) – *Principles of Ecotoxicology*	3
IMB 401 (S) – *Medicinal Microbiology & Immunology*	4
MATH 363 (F, S) – *Intro. To Statistical Methods*	3
MCB 304 (F) – *Molecular Genetics*	4-5
MCB 325 (F) – *The Biology of Cancer*	3-4
MCB 410 (F, SS) – *Cell Biology*	3-4
MCB 411 (F, SS) – *Molecular Biology*	3-4
MCB 416A (S) – *Bioinformatics & Funct. Genomic Analysis*	3
MCB 425 (S) – *Cancer Discoveries*	3
MCB 480 (F) – *Intro. To Systems Biology*	3
MIC 328R (S, SS) – *Microbial Physiology*	3
MIC 419 (F, SS) – *Immunology*	4
MIC 452 (F) – *Antibiotics-A Biological Perspective*	3
NSC 408 – *Nutritional Biology*	3
NSC 475 (S) – *Nutrigenomics for Dis. Prev. & Inter.*	3
NROS 307 (F) – *Cellular Neurophysiology*	3-4
NROS 310 (S) – *Molecular & Cellular Biology of Neurons*	3-4
NROS 430 (S) – *Neurogenetics*	3
PCOL 320 (F, S) – *Toxicology of Substances*	3
PCOL 410 (S) – *Medicinal Chemistry*	5
PHCL 412 (F) – *Intro. To Pharmacology*	3
PHCL 445 (S) – *Drugs of Abuse*	3
PHYS 431 (S) – *Molecular Biophysics*	3
PLP 320 (F) – *Microbiomes*	3
PLP 329A (F) – *Microbial Diversity*	3
PLP 428R (S) – *Microbial Genetics*	3
PLS 312 (S) – *Animal & Plant Genetics*	4
PLS 340 (F) – *Intro. To Biotechnology*	3
PLS 359 (F) – *Plant Cell Structure & Function*	3
PLS 360 (S) – *Plant Growth & Physiology*	3
PLS 448A (F) – *Plant Biochemistry & Metabolic Eng.*	3
PSIO 380 (F, S) – *Fundamentals of Human Physiology*	4
PSIO 404 (S) – *Advanced Topics in Cellular Physiology*	3
PSIO 420 (F) – *Exercise & Environmental Physiology*	3
PSIO 431 (F, S) – *Physiology of the Immune System*	3
PSIO 465 (S) – *Neurophysiology*	3
PSIO 484 (S) – *Cardiovascular Muscle Biology & Disease*	3
PSY 413 (F, S) – *Drugs, Brain, and Behavior*	3

Course offerings per semester are subject to change; F, S, and SS are designated on the classes above. Please check the Schedule of Classes for the most updated course information. Students are responsible for completing any prerequisites or contacting the offering department if permission is required.

Recommended Academic Plan *Additional MATH pre-requisite coursework may be required to start Math & Chemistry. Please consult CBC Advisor for an individualized academic plan.*

1st Semester	
CHEM 181 *(F)*	4
MATH 122A & 122B	5
CHEM 195A *(F)*	1
ENGL 101	3
UNIV 101	1
Total Units	**14**

2nd Semester	
CHEM 182 *(S)*	4
MATH 129	3
ENGL 102	3
Gen Ed EP or BC	3
Gen Ed EP or BC	3
Total Units	**16**

3rd Semester	
CHEM 241A	3
CHEM 243A	1
MCB 181R/L	3/1
CHEM 380	3
Gen Ed EP or BC	3
Total Units	**14**

4th Semester	
CHEM 241B	3
CHEM 243B	1
BIOC 296B	1
ECOL 182R/L	3/1
Gen Ed EP or BC	3
Total Units	**12**

5th Semester	
BIOC 462A	4
PHYS 141	4
2nd Language	4
BIOC 463A (or in Spring)	4
Total Units	**16**

6th Semester	
BIOC 462B	4
PHYS 241	4
2nd Language	4
Gen Ed EP or BC	3
Total Units	**15**

7th Semester	
CHEM 480A	3
BIOC 498(H) *(1st)*	3
Bioc Elective	3
Gen Ed EP or BC	3
Total Units	**12**

8th Semester	
CHEM 480B	3
BIOC 498(H) *(2nd)*	3
UNIV 301	1
Bioc elective	3
Total Units	**10**