B.A. BIOCHEMISTRY

NAME _____ **SID #** _____ **DATE:**_____

CATALOG YEAR 2020-2021 **EXPECTED GRADUATION DATE** _____

GENERAL EDUCATION REQUIREMENTS

English Composition
ENGL 101 or 107 ..... 3 ____
ENGL 102 or 108 ..... 3 ____
Or
ENGL 109H ..... 3 ____

Second Language
4nd semester proficiency by credit or exam required. ... ____

Individuals and Societies (3 courses)
Tier One ____ 150 A, B, or C ..... 3 ____
Tier One ____ 150 A, B, or C ..... 3 ____
Tier Two Individuals & Societies course ..... 3 ____

Traditions and Cultures / Humanities (3 courses)
Tier One ____160 A, B, C, or D ..... 3 ____
Tier One ____160 A, B, C, or D ..... 3 ____
Tier Two Humanities course ..... 3 ____

Tier Two Arts (3 units total)
_____ 3___

Natural Sciences (NATS) - Satisfied by CBC major course work.

Diversity Emphasis Course
(Gender/Race/Class/Ethnicity/Sexual Orient./Non-Western)
One course must be taken from the GRCESONW list; Can be double-dipped with Tier One or Tier Two courses
_____ ____

BIOC FOUNDATION COURSES

General Chemistry (with labs)
CHEM 151 ***OR*** 141/143 ***OR*** 161/163 ..... 4 ___
CHEM 152 ***OR*** 142/144 ***OR*** 162/164 ..... 4 ___

Biology
MCB 181R - Introductory Biology I ..... 3 ___
MCB 181L - Introductory Biology I Lab ..... 1 ___
ECOL 182R - Introductory Biology I..... 3 ___
ECOL 182L - Introductory Biology II Lab 1 ..... 1 ___

Mathematics (Calculus I, & Calculus II or Biostatistics)
MATH 122A/B **OR** *125*-5 ..... 3-5 ___
MATH 129 or Math 263 ..... 3 ___

Physics (Introductory Physics)
PHYS 102 ***OR*** 140 ***OR*** 141 ***OR*** 161H ..... 3- 4 ___
PHYS 103 ***OR*** 240 ***OR*** 241 ***OR*** 261H ..... 3- 4 ___

BIOC MAJOR COURSEWORK

Organic Chemistry
First Semester Lecture and Lab
CHEM 241A (F,S,S) ***OR*** CHEM 246A (F) ***OR*** 242A (F) ..... 3 ___
CHEM 243A (F,S,SS) ***OR*** 247A (F) ***OR*** CHEM244A (F)... 1-2 ___

Second Semester Lecture and Lab
CHEM 241B (F,S,SS) ***OR*** CHEM 246B (S) ***OR*** 242B (S) ..... 3 ___
CHEM 241B (F,S,SS) ***OR*** 247B (S) *OR* CHEM244B (S)... 1-2 ___

Biochemistry
BIOC 296B Intro to Biochemical Research (F, S) ..... 1 ____
BIOC 462A – Biochemistry (F) ..... 4 ____
BIOC 462B - Biochemistry (S) ..... 4 ____
BIOC 463A – Biochemical Lab Techniques (F, S) ..... 4 ____

Biochemistry Electives (6 units required):
BIOC 392(H), 399(H), 492(H), 499(H) 498(H) ....1-6 ____
BIOS 376 ....3 ____
BME 486..... ....3 ____
CHEE 477R..... ....3 ____
CHEM 325 (2), 326 (2) ....2-4 ____
CHEM 450..... ....3 ____
ECOL 320, 326, 346, 474..... ....3-5 ____
MATH 363, 376..... ....3 ____
MCB 304, 325, 340, 410, 411, 425, 480 .....3-5 ____
MIC 328R, 419, 428R, 452 ....3 ____
NSC 408, 475..... ....3 ____
NSCS 307, 310, 430..... ....3-4 ____
PCOL 410..... ....5 ____
PHCL 412..... ....3 ____
PHYS 431..... ....3 ____
PLS 312, 340, 359, 360, 448A..... .....3 ____
PSIO 380, 404, 420, 431, 484..... ....3 -4____

UNIVERSITY REQUIREMENTS:
120 total units ☐ 42 upper division units ☐
2.000+ cum GPA ☐ 2.000+ major GPA ☐

MCWA complete___ 18 of 30 UA units upper division ____
30+ total units at UA___ <60 correspondence/UA exam units____

Biochemistry Elective Descriptions

BIOC 392(H), 492(H) Directed Research (variable units)
BIOC 399(H), 499(H) Independent Study (variable units)
BIOC 498(H) (3) Senior Capstone/Thesis
BIOS 376 (3) Introduction to Biostatistics
BME 486 (3) Biomaterial-Tissue Interactions
CHEE 477R (3) Microbiology for Engineers
CHEM 325 (2) Analytical Chemistry
CHEM 326 (2) Analytical Chemistry Lab
CHEM 450 (3) Synthetic and Mechanistic Organic Chemistry
ECOL 320 or 320H (4/5) Genetics
ECOL 326 (3) Genomics
ECOL 346 (4) BIoinformatics
ENVS 474 (4) Aquatic Plants and the Environment
MATH 363 (3) Intro. to Statistical Methods
MCB 304 (4-5) Molecular Genetics
MCB 325 (3-4) The Biology of Cancer
MCB 410 (3-4) Cell Biology
MCB 411 (3-4) Molecular Biology
MCB 425 (3) Cancer Discoveries
MCB 480 (3) Intro. to Systems Biology
MIC 328R (3) Microbial Physiology
MIC 419 (4) Immunology
MIC 452 (3) Antibiotics – A Biological Perspective
NSC 408 (3) Nutritional Biology
NSC 475 (3) Nutrigenomics for the Study of Disease Prev & Intervention
NSCS 307 (3-4) Cellular Neurophysiology
NROS 310 (3-4) Molecular and Cellular Biology of Neurons
NROS 430 (3) Neurogenetics
PCOL 410 (5) Medicinal Chemistry
PHCL 412 (3) Intro. to Pharmacology
PLP 428R (3) Microbial Genetics
PLS 312 (4) Animal and Plant Genetics
PLS 340 (3) Intro. to Biotechnology
PLS 359 (3) Plant Cell Structure and Function
PLS 360 (3) Plant Growth and Physiology
PLS 448a (3) Plant Biochemistry and Metabolic Engineering
PSIO 380(4) Fundamentals of Human Physiology
PSIO 404(3) Advanced Topics in Cellular Physiology
PSIO 420(3) Exercise and Environmental Physiology
PSIO 431 (3) Physiology of the Immune System
PSIO 484 (3) Cardiovascular Muscle Biology and Disease
PHYS 431(3) Molecular Biophysics

Note: Course offerings are subject to change. Please consult the Schedule of Classes for specific semester course information

Biochemistry Academic Plan

1st Semester Fall
General Chemistry I w/ Lab (4)
MATH 122A (1)
MATH 122B (4)
ENGL 101 English Composition (3)
Tier I General Education (3)

2nd Semester Spring
General Chemistry II w/ Lab (4)
MATH 129 or 263 (3)
ENGL 102 English Composition II (3)
Tier I General Education (3)
Tier I General Education (3)

3rd Semester Fall
Organic Chemistry I Lecture (3)
Organic Chemistry I Lab (1)
MCB 181R Introductory Biology (3)
MCB 181L Introductory Biology Lab (1)
BIOC 296B (1)
Second Language (4)

4th Semester Spring
Organic Chemistry II Lecture (3)
Organic Chemistry II Lab (1)
ECOL 182R Introductory Biology II (3)
ECOL 182L Introductory Biology II Lab (1)
Tier I General Education (3)
Second Language (4)

5th Semester Fall
BIOC 462A Biochemistry I (4)
BIOC 463A Biochemical Lab (4) ~dept consent required to enroll
Physics I (3)
Second Language (4)

6th Semester Spring
BIOC 462B Biochemistry I (4)
Physics II (3)
Tier II General Education (3)
Second Language (4)

7th Semester Fall
Tier II General Education (3)
Biochemistry Elective (3)
Electives (6)

8th Semester Spring
Tier II General Education (3)
Biochemistry Elective (3)
Electives (6)

Note that some courses are offered in the fall or spring only. This checklist indicates BIOCBA requirements. Additional coursework not listed on this page is required in order to graduate. Work with your advisor every semester to be sure you are on track to meet all requirements.