

B.A. BIOCHEMISTRY

NAME _____ SID # _____ DATE: _____

CATALOG YEAR 2021-2022

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 161/1634 _____
 CHEM 152 OR 142/144 OR 162/1644 _____

Biology

MCB 181R - Introductory Biology I 3 _____
 MCB 181L - Introductory Biology I Lab 1 _____
 ECOL 182R - Introductory Biology II 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 161H3- 4 _____
 PHYS 103 OR 240 OR 241 OR 261H3- 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 3763 _____
 BME 486.....3 _____
 CHEE 477R.....3 _____
 CHEM 325, 326, 405A, 405B, 405C, 450.....1-3 _____
 CHEM 450.....3 _____
 ECOL 320, 326, 346, 474.....3-5 _____
 ENVS 477.....3 _____
 IMB401.....4 _____
 MATH 363, 376.....3 _____
 MCB 304, 325, 340, 410, 411, 416A. 425, 4803-5 _____
 MIC 328R, 419, 428R, 4523 _____
 NSC 408, 475.....3 _____
 NSCS 307, 310, 430.....3-4 _____
 PCOL 410.....5 _____
 PHCL 412, 445.....3 _____
 PHYS 431.....3 _____
 PLS 312, 340, 359, 360, 448A.....3 _____
 PSIO 380, 404, 420, 431, 465, 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 405A (1) Basic Lab Safety
CHEM 405B (1) Advanced Lab Safety
CHEM 405C (1) Chemical Hygiene and Regulations
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
ENVS 477 (3) Principles of Ecotoxicology
IMB 401 (4) Medical Microbiology and Immunology
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
MCB416A (3) Bioinformatics and Functional Genomic Analysis
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
PHCL 445 (3) Drugs of Abuse
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
PSIO 465 Neurophysiology (3) (5)

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)

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)

5th Semester Fall

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

7th Semester Fall

Tier II General Education (3)
Biochemistry Elective (3)
Electives (6)

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)

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)

6th Semester Spring

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

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 may be required in order to graduate. Work with your advisor every semester to be sure you are on track to meet all requirements.