

B.A. BIOCHEMISTRY

NAME _____ SID # _____ DATE: _____

CATALOG YEAR 2023-2024

EXPECTED GRADUATION DATE _____

GENERAL EDUCATION REQUIREMENTS

English Composition

ENGL 101 or 107 3 _____

ENGL 102 or 108 3 _____

Or

ENGL 109H 3 _____

Foundations Math (Placement may require pre-requisite coursework prior to completion of this requirement.)

MATH 122A & B (5) or MATH 125 (3) 3 _____

Second Language

4th semester proficiency 4-5 _____

UNIV 101: Intro to the General Education Experience... 1 _____

Exploring Perspectives

Artist 3 _____

Humanist 3 _____

Natural Scientist 3 _____

Social Scientist..... 3 _____

Building Connections

Course 1 3 _____

Course 2 3 _____

Course 3 3 _____

UNIV301: General Education Portfolio..... 1 _____

32 Units Minimum.....32 _____

Note: 9 units may be used to fulfill GE requirements while double-dipping with requirements in a major, pre-major, or minor.

BIOC FOUNDATION COURSES

General Chemistry (with labs)

CHEM 181 OR 161/163 4 _____

CHEM 182 OR 162/164 4 _____

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 161H 3- 4 _____

PHYS 103 OR 240 OR 241 OR 261H 3- 4 _____

BIOC MAJOR COURSEWORK

CBC First-Year Colloquium

CHEM 195A 1 _____

Organic Chemistry

First Semester Lecture and Lab

CHEM 241A (F,S,S) OR 246A (F) OR 242A (F) 3 _____

CHEM 243A (F,S,SS) OR 247A (F) OR 244A (F)..... 1-2 _____

Second Semester Lecture and Lab

CHEM 241B (F,S,SS) OR 246B (S) OR 242B (S) 3 _____

CHEM 243B (F,S,SS) OR 247B (S) OR 244B (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, 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, 480 3-5 _____

MIC 328R, 419, 428R, 452 3 _____

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, 427, 431, 465, 484..... 3 -4 _____

UNIVERSITY REQUIREMENTS:

120 Total Units 42 Upper Division Units

2.0+ Cum GPA 2.0+ Major GPA

MCWA 30 UA Units

18/30 Upper Division UA Units

56+ University Units

B.A. BIOCHEMISTRY

Biochemistry Elective Descriptions

Please consult the Schedule of Classes for specific semester course information

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) 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
MCB416A (3) Bioinformatics and Functional Genomic Analysis

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
PHCL 445 (3) Drugs of Abuse
PHYS 431 (3) Molecular Biophysics
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 427 (3) Metabolism and Disease
PSIO 431 (3) Physiology of the Immune System
PSIO 465 (3) Neurophysiology
PSIO 484 (3) Cardiovascular Muscle Biology and Disease

Biochemistry Academic Plan

1st Semester Fall

CHEM 195A
General Chemistry I w/ Lab (4)
MATH 122A (1)
MATH 122B (4)
UNIV 101 (1)
ENGL 101 English Composition (3)
GE Core: Exploring Perspectives or Building Connections (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 (4-5)

5th Semester Fall

BIOC 462A Biochemistry I (4)
BIOC 463A Biochemical Lab (4)
Physics I (3-4)
Second Language (4-5)

7th Semester Fall

Biochemistry Elective (3)
GE Core: Exploring Perspectives or Building Connections (3)
Electives (6)

2nd Semester Spring

General Chemistry II w/ Lab (4)
MATH 129 or 263 (3)
ENGL 102 English Composition II (3)
GE Core: Exploring Perspectives or Building Connections (3)
GE Core: Exploring Perspectives or Building Connections (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)
GE Core: Exploring Perspectives or Building Connections (3)
Second Language (4-5)

6th Semester Spring

BIOC 462B Biochemistry I (4)
Physics II (3-4)
GE Core: Exploring Perspectives or Building Connections (3)
Second Language (4-5)

8th Semester Spring

Biochemistry Elective (3)
UNIV 301 (1)
GE Core: Exploring Perspectives or Building Connections (3)
Electives (5)

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