B.A. BIOCHEMISTRY

NAME _______________________________________SID # ____________________________DATE:_________

CATALOG YEAR 2023-2024

EXPECTED GRADUATION DATE

GENERAL EDUCATION REQUIREMENTS

<table>
<thead>
<tr>
<th>English Composition</th>
<th>3</th>
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<tbody>
<tr>
<td>ENGL 101 or 107</td>
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<tr>
<td>ENGL 102 or 108</td>
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<td>ENGL 109H</td>
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<tr>
<td>Foundations Math (Placement may require pre-requisite coursework prior to completion of this requirement.)</td>
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<tr>
<td>MATH 122A &amp; B (5) or MATH 125 (3)</td>
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<tr>
<td>Second Language</td>
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<tr>
<td>4th semester proficiency</td>
<td>4-5</td>
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<tr>
<td>UNIV 101: Intro to the General Education Experience</td>
<td>1</td>
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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

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) | 4 |
| CHEM 181 OR 161/163 | |
| CHEM 182 OR 162/164 | |
| 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 |

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

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

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

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
BIOC 498(H) (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 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 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)

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)

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)

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)

5th Semester Fall
BIOC 462A Biochemistry I (4)
BIOC 463A Biochemical Lab (4)
Physics I (3-4)
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)

7th Semester Fall
Biochemistry Elective (3)
GE Core: Exploring Perspectives or Building Connections (3)
Electives (6)

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.