



Name:

**GENERAL EDUCATION REQUIREMENTS****English Composition**

WRIT 101 or 107 3

WRIT 102 or 108 3

Or

WRIT 109H 3

**Second Language**2<sup>nd</sup> Semester Proficiency or higher 4-5**Introduction to General Education**

UNIV 101 1

**Exploring Perspectives**

Artist 3

Humanist 3

Natural Scientist (*fulfilled by MCB 181R or PHYS 141*)

Social Scientist 3

**Building Connections**

Course 1 3

Course 2 3

**Civic Institutions**

Civics Course 3

**General Education Portfolio**

UNIV 301 1

**FOUNDATIONAL MATH & SCIENCE****Mathematics**MATH 122A & B or MATH 125 – *Calculus I* 3-5MATH 129 – *Calculus 2* 3BIOS 376/MATH 263 (*recommended*) or

CHEM 380 (F) or MATH 254 or MATH 223 3

**Biology**MCB 181R – *Intro Biology 1* 3MCB 181L – *Intro Biology Lab 1* 1ECOL 182R – *Intro Biology 2* 3ECOL 182L – *Intro Biology Lab 2* 1**Physics**PHYS 140 or 141 or 161H – *Intro Mechanics* 4PHYS 240 or 241 or 261H – *Intro Electricity & Magnetism* 4**General Chemistry**CHEM 181 – *General Chemistry 1* 4CHEM 182 – *General Chemistry 2* 4

SID:

**BIOCHEMISTRY MAJOR REQUIREMENTS (C or higher required)****CBC Majors First-Year Colloquium**

CHEM 195A (F) 1

**Organic Chemistry**CHEM 246 – *Principles of Organic Chemistry* 3CHEM 256L – *Synthesis Lab* 3**Biochemistry Core**BIOC 296B – *Intro to Biochemical Research* 2BIOC 462A (S) – *Biochemistry I* 4BIOC 462B (F) – *Biochemistry 2* 4BIOC 463A – *Biochemistry Lab Techniques* 4BIOC 498 – *Senior Capstone/Thesis* 3/3**Physical Chemistry**CHEM 385 – *Principles of Physical Chemistry* 3**Chemistry Elective** (Choose one)CHEM 310 – *Principles of Inorganic Chemistry* 3CHEM 227 – *Principles of Analytical Chemistry* 3CHEM 485 – *Advanced Physical Chemistry* 3CHEM 346 – *Advance Organic Chemistry* 3**Biochemistry Electives** (6 units minimum)*See Page 2 for complete electives list*

Course 1

Course 2

**GRADUATION REQUIREMENTS****Graduation Requirements**

Total Units: 120

Upper-Division Units: 42

Cumulative GPA: 2.000+

Major GPA 2.000+

Units in Residence @ UA: 30+

Upper-Division Units @ UA: 18+

**Biochemistry Electives** (6 units minimum)

|  |     |   |     |
|--|-----|---|-----|
| BIOC 395B (MARC program only) – <i>Scientific Writing</i>                      | 1   | MIC 419 (F, SS) – <i>Immunology</i>                               | 4   |
| BIOC 427 (S) – <i>Bioethics and Research Ethics</i>                            | 3   | MIC 452 (F) – <i>Antibiotics-A Biological Perspective</i>         | 3   |
| BIOS 376 (cannot also receive credit for MATH 263) – <i>Intro. to Biostats</i> | 3   | NSC 408 – <i>Nutritional Biology</i>                              | 3   |
| BME 486 (F) – <i>Biomaterial-Tissue Interactions</i>                           | 3   | NSC 475 (S) – <i>Nutrigenomics for Dis. Prev. &amp; Inter.</i>    | 3   |
| CHEE 377 (F) – <i>Microbiology for Engineers</i>                               | 3   | NROS 307 (F) – <i>Cellular Neurophysiology</i>                    | 3-4 |
| CHEM 325 (F) – <i>Analytical Chemistry</i>                                     | 2   | NROS 310 (S) – <i>Molecular &amp; Cellular Biology of Neurons</i> | 3-4 |
| CHEM 326 (F) – <i>Analytical Chemistry Lab</i>                                 | 2   | NROS 430 (S) – <i>Neurogenetics</i>                               | 3   |
| CHEM 365 (S) – <i>Introduction to Clinical Analysis</i>                        | 3   | PCOL 320 (F, S) – <i>Toxicology of Substances</i>                 | 3   |
| CHEM 405A (S) – <i>Basic Lab Safety</i>  | 1   | PCOL 410 (S) – <i>Medicinal Chemistry</i>                         | 5   |
| CHEM 405B (S) – <i>Advanced Lab Safety</i>                                     | 1   | PHCL 412 (F) – <i>Intro. To Pharmacology</i>                      | 3   |
| CHEM 405C (S) – <i>Chemical Hygiene &amp; Regulations</i>                      | 1   | PHCL 445 (S) – <i>Drugs of Abuse</i>                              | 3   |
| CHEM 450 (F) – <i>Synthetic &amp; Mechanistic Organic Chemistry</i>            | 3   | PHCL 460 (S) – <i>Designing Drugs – from Chemistry to Cure</i>    | 3   |
| ECOL 320(H) (F, SS) – <i>Genetics</i>  | 4-5 | PHYS 431 (S) – <i>Molecular Biophysics</i>                        | 3   |
| ECOL 326 (F, SS) – <i>Genomics</i>   | 3   | PLP 320 (F) – <i>Microbiomes</i>                                  | 3   |
| ECOL 329A (F) – <i>Microbial Diversity</i>                                     | 3   | PLP 329A (F) – <i>Microbial Diversity</i>                         | 3   |
| ECOL 346 – <i>Bioinformatics</i>   | 4   | PLP 428R (S) – <i>Microbial Genetics</i>                          | 3   |
| ENVS 474 (F) – <i>Aquatic Plants &amp; the Environment</i>                     | 4   | PLS 312 (S) – <i>Animal &amp; Plant Genetics</i>                  | 4   |
| ENVS 477 (S) – <i>Principles of Ecotoxicology</i>                              | 3   | PLS 340 (F) – <i>Intro. To Biotechnology</i>                      | 3   |
| IMB 401 (S) – <i>Medicinal Microbiology &amp; Immunology</i>                   | 4   | PLS 359 (F) – <i>Plant Cell Structure &amp; Function</i>          | 3   |
| MATH 363 (F, S) – <i>Intro. To Statistical Methods</i>                         | 3   | PLS 360 (S) – <i>Plant Growth &amp; Physiology</i>                | 3   |
| MCB 304 (F) – <i>Molecular Genetics</i>  | 4-5 | PLS 448A (F) – <i>Plant Biochemistry &amp; Metabolic Eng.</i>     | 3   |
| MCB 325 (F) – <i>The Biology of Cancer</i>                                     | 3-4 | PSIO 380 (F, S) – <i>Fundamentals of Human Physiology</i>         | 4   |
| MCB 340 (F) – <i>Introduction to Biotechnology</i>                             | 3   | PSIO 404 (S) – <i>Advanced Topics in Cellular Physiology</i>      | 3   |
| MCB 460 (S) – <i>Plant Growth and Physiology</i>                               | 3   | PSIO 420 (F) – <i>Exercise &amp; Environmental Physiology</i>     | 3   |
| MCB 410 (F, SS) – <i>Cell Biology</i>  | 3-4 | PSIO 431 (F, S) – <i>Physiology of the Immune System</i>          | 3   |
| MCB 411 (F, SS) – <i>Molecular Biology</i>                                     | 3-4 | PSIO 465 (S) – <i>Neurophysiology</i>                             | 3   |
| MCB 416A (S) – <i>Bioinformatics &amp; Funct. Genomic Analysis</i>             | 3   | PSIO 484 (S) – <i>Cardiovascular Muscle Biology &amp; Disease</i> | 3   |
| MCB 425 (S) – <i>Cancer Discoveries</i>  | 3   | PSY 413 (F, S) – <i>Drugs, Brain, and Behavior</i>                | 3   |
| MCB 480 (F) – <i>Intro. To Systems Biology</i>                                 | 3   |   |     |
| MCB 484 (S) – <i>Cardiovascular Muscle Biology and Disease</i>                 | 3   |   |     |
| MIC 328R (S, SS) – <i>Microbial Physiology</i>                                 | 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.

| 1 <sup>st</sup> Semester |           | 2 <sup>nd</sup> Semester |           | 3 <sup>rd</sup> Semester       |           | 4 <sup>th</sup> Semester      |           |
|--------------------------|-----------|--------------------------|-----------|--------------------------------|-----------|-------------------------------|-----------|
| CHEM 181 (F)             | 4         | CHEM 182 (S)             | 4         | CHEM 246                       | 3         | BIOC 462A (S)                 | 4         |
| MATH 122A & 122B         | 5         | MATH 129                 | 3         | CHEM 256L                      | 2         | BIOC 463A                     | 4         |
| CHEM 195A (F)            | 1         | WRIT 102                 | 3         | MCB 181R/L                     | 3/1       | BIOC 296B                     | 2         |
| WRIT 101                 | 3         | Gen Ed EP/BC/CI          | 3         | Math 263 or Calc 3             | 3         | ECOL 182R/L                   | 3/1       |
| UNIV 101                 | 1         | Gen Ed EP/BC/CI          | 3         | Gen Ed EP/BC/CI                | 3         | Gen Ed EP/BC/CI               | 3         |
| <b>Total Units</b>       | <b>14</b> | <b>Total Units</b>       | <b>16</b> | <b>Total Units</b>             | <b>15</b> | <b>Total Units</b>            | <b>17</b> |
| 5 <sup>th</sup> Semester |           | 6 <sup>th</sup> Semester |           | 7 <sup>th</sup> Semester       |           | 8 <sup>th</sup> Semester      |           |
| BIOC 462B (F)            | 4         | Chem or Bioc elective    | 3         | CHEM 385 (F)                   | 3         | Chem or Bioc elective         | 3         |
| PHYS 140 or 141          | 3-4       | PHYS 240 or 241          | 3-4       | BIOC 498(H) (1 <sup>st</sup> ) | 3         | BIOC 498(H)(2 <sup>nd</sup> ) | 3         |
| 2 <sup>nd</sup> Language | 4         | 2 <sup>nd</sup> Language | 4         | Bioc Elective                  | 3         | UNIV 301                      | 1         |
| Gen Ed EP/BC/CI          | 3         | Gen Ed EP/BC/CI          | 3         | <i>Additional Units</i>        | 6         | <i>Additional Units</i>       | 7         |
| <b>Total Units</b>       | <b>15</b> | <b>Total Units</b>       | <b>14</b> | <b>Total Units</b>             | <b>15</b> | <b>Total Units</b>            | <b>14</b> |