

# CURRICULUM GUIDE

## Biomedical Sciences, B.S. (Biomedical Research Concentration)

2023-2024

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The schedule below is an **EXAMPLE** of how you can arrange your class schedule. Please consult your advisor for specific changes that may need to be made.

|   | Fall Semester  | Spring Semester                       | Course Number   | Course Name                               |
|---|--|---------------------------------------|---|---|
| <b>Freshman Year</b>                        | SCO 100B 1   | BIO 112 4                             | <b>GENERAL EDUCATION &amp; UNIVERSITY REQUIREMENTS (37)</b>   |   |
|   | BIO 111 4  | CHE 112 3                             | SCO 100B  | Student Success Seminar for Biology (1)   |
|   | <sup>c</sup> CHE 111 (fulfills Gen. Ed. 4) 3                     | CHE 112L 1                            | <b>CORE COURSE REQUIREMENTS (28)</b>  |   |
|   | CHE 111L 1   | MAT 234 4                             | BIO 111   | Cell and Molecular Biology (4)            |
|   | <sup>c</sup> STA 270 <u>or</u> STA 215 (fulfills Gen. Ed. 2) 3-4 | Gen. Ed. 1B (ENG 102) 3               | BIO 112   | Ecology and Evolution (4)                 |
|   | Gen. Ed. 1A (ENG 101) 3  |                                       | BIO 315   | Genetics (4)                              |
|   | <b>TOTAL 15-16</b>   | <b>TOTAL 15</b>                       | BIO 319   | Zoology (4)                               |
| <b>Sophomore Year</b>                       | BIO 319 4  | BIO 332 1                             | BIO 320   | Principles of Microbiology (4)            |
|   | CHE 361 3  | BIO 320 4                             | BIO 331   | Cell Biology (3)                          |
|   | CHE 361L 1   | CHE 362 3                             | BIO 332   | Careers in Biomedical Sciences (1)        |
|   | <sup>c</sup> PHY 131 <u>or</u> PHY 201 (fulfills Gen. Ed. 4) 5   | CHE 362L 1                            | BIO 348   | Vertebrate Physiology (3)                 |
|   | Gen. Ed. 6 (Diversity) 3   | INF 104 3                             | BIO 495   | Evolution Theory and Application (1)      |
|   |  | Gen. Ed. 1C (CMS 100 <u>or</u> 210) 3 | <b>BIOMEDICAL RESEARCH CONCENTRATION REQUIREMENTS (25)</b>  |   |
|   | <b>TOTAL 16</b>  | <b>TOTAL 15</b>                       | BIO 531   | Principles of Molecular Biology I (4)     |
| <b>Junior Year</b>                          | BIO 315 4  | BIO 348 4                             | *CHE 362  | Organic Chemistry I (3)                   |
|   | BIO 331 3  | CHE 432 1                             | *CHE 362L   | Organic Chemistry Lab II (1)              |
|   | CHE 430 <u>or</u> 431 3  | † Restricted Elective 3-4             | §*CHE 430 <u>or</u>   | Biochemistry of Macromolecules (3)        |
|   | PHI 383 3  | Gen. Ed 5A (History) 3                | §*CHE 431   | Metabolic Biochemistry (3)                |
|   | Gen. Ed. 5B (PSY 200 recommended) 3                              | Free Elective 3                       | *CHE 432  | Biochemistry Laboratory (1) (spring only) |
|   |  | ♣ Free Elective 0-1                   | *MAT 234  | Calculus I (4)                            |
|   | <b>TOTAL 16</b>  | <b>TOTAL 15</b>                       | † PLUS NINE (9) HOURS selected from the following (restricted elective):  |   |
| <b>Senior Year</b>                          | BIO 531 4  | BIO 495 1                             | BIO 342   | Comparative Vertebrate Anatomy (4)        |
|   | † Restricted Elective 3-4  | † Restricted Elective 3-4             | BIO 527   | Immunology (3)                            |
|   | Gen Ed. 3A (Arts) 3  | Gen Ed. 3B (Humanities) 3             | BIO 528   | Virology (3)                              |
|   | Free Elective 3  | Gen Ed. 6 (Diversity) 3               | BIO 533   | Mammalogy (3)                             |
|   | ♣ Free Elective 0-2  | Free Elective 3                       | BIO 535   | Pathogenic Microbiology (4)               |
|   | <b>TOTAL 14-15</b>   | <b>TOTAL 14</b>                       | BIO 546   | Histology (4)                             |
| <b>TOTAL HOURS TO DEGREE COMPLETION 120</b> |  |                                       | BIO 547   | Comparative Vert. Embryology (4)          |
|   |  |                                       | BIO 549   | Neurobiology (3)                          |
|   |  |                                       | BIO 598   | Special Problems (1-6)                    |
|   |  |                                       | §* CHE 430  | Biochemistry of Macromolecules (3)        |
|   |  |                                       | §* CHE 431  | Metabolic Biochemistry (3)                |
|   |  |                                       | § Cannot be used for credit in both concentration requirement and restricted electives categories above.        |   |
|   |  |                                       | <b>SUPPORTING COURSE REQUIREMENTS (17-18)</b>   |   |
|   |  |                                       | <sup>c</sup> CHE 111  | General Chemistry I (3)                   |
|   |  |                                       | *CHE 111L   | General Chemistry Lab I (1)               |
|   |  |                                       | *CHE 112  | General Chemistry II (3)                  |
|   |  |                                       | *CHE 112L   | General Chemistry Lab II (1)              |
|   |  |                                       | *CHE 361  | Organic Chemistry I (3)                   |
|   |  |                                       | *CHE 361L   | Organic Chemistry Lab I (1)               |
|   |  |                                       | INF 104   | Computer Literacy with Software Apps. (3) |
|   |  |                                       | PHI 383   | Health & Biomedical Ethics (3)            |
|   |  |                                       | <sup>c</sup> PHY 131 <u>or</u>  | College Physics I (5)                     |
|   |  |                                       | <sup>c</sup> PHY 201  | University Physics I (5)                  |
|   |  |                                       | <sup>c</sup> STA 215 <u>or</u>  | Intro. to Statistical Reasoning (3)       |
|   |  |                                       | <sup>c</sup> STA 270  | Applied Statistics I (4)                  |
|   |  |                                       | Bracketed items must be taken concurrently.   |   |
|   |  |                                       | <b>FREE ELECTIVES (12-13)</b>   |   |
|   |  |                                       | <sup>c</sup> Denotes that 3 credit hours from this course are/can be applied to fulfill a Gen. Ed. requirement. |   |

\* **PREREQUISITES:** Consult with your advisor and/or the University catalog regarding prerequisites for upper division BIO courses. CHE 111/111L, 112/112L, 361/361L, 362/362L, 366, 430, and/or 366; MAT 114 or higher; PHY 131 and/or 201.

♣ Due to variable course hour choices for MAT requirement and concentration requirements, marked free electives may also be variable. Consult with your advisor to ensure you have a minimum of 120 total credit hours for graduation.

**Upper division courses:** All students are required to have a minimum of 42 hrs. upper division (300-level or above) courses distributed throughout Major/Supporting/Gen Ed/Free Electives categories.

Refer to the University Catalog at <http://www.catalogs.eku.edu/> regarding University and General Education Requirements.