

# MILLERSVILLE UNIVERSITY

Student Name: \_\_\_\_\_ Student ID # \_\_\_\_\_

|              |  |
|--------------|--|
| DEGREE: BS   | <b>MAJOR REQUIREMENTS FOR A BS DEGREE IN</b> |
| MAJOR: BIOL  | <b>BIOLOGY: PRE-MEDICAL PROFESSIONS</b>      |
| OPTION: PREM | Total credit hours required: 120.0 minimum   |

## REQUIREMENTS AND POLICIES FOR THE BS BIOLOGY MAJOR

### A. Policies for Admission to the Major

1. New students (freshmen and transfers) must be admitted to the Biology major by the Office of Admissions upon admission to the University.
2. Admission of Millersville University students to the Biology major (from other departments or undeclared status) requires that the student is in satisfactory academic standing as described in the Undergraduate catalog. Students who were dropped from a Biology major also must satisfy the Biology Retention in the Major criteria before being readmitted to a Biology major.
3. Non-degree and continuing education students must be admitted to the Biology major by the Office of Admissions.

### B. Policies for Retention in the Major

1. University requirements for retention must be met.
2. All Biology majors must earn grades of C- (C minus) or higher in all core courses (BIOL 101, 211, 221, 343, 362, 364) required for their option.
3. The requirements stated above must be satisfied before completion of 90 Millersville University credit hours.
4. Millersville University students changing majors, or Biology majors changing options within the Biology major, must satisfy the above requirements prior to completion of 45 additional Millersville University credit hours. Note: Students who desire to change their major to Biology must refer to the Biology department's Admission to the Major Policy. Those transferring into the major may substitute BIOL 100 for BIOL 101 if they earn a grade of B- (B minus) or higher in this course.
5. Transfer students with 60 credit hours or more must satisfy the above requirements prior to completion of 45 Millersville University credit hours. Transfer students with fewer than 60 credits should refer to the policy for all other majors (part 3 above).
6. Any students failing to meet the above requirements will be dropped from the Biology major. Students who wish to re-enter the major, must follow the requirements stipulated in part 4 above.

### C. Policies for Completion of the Major

1. Completion of all University curricular requirements.
2. ENGL 319, Science Writing, is the recommended course for the Upper Level Writing Requirement under the General Education Curriculum Requirements.

### D. Admission to medical school and other professional programs is competitive and not guaranteed.

**Note to the student:** *This form is provided as a guide. It is your responsibility to consult regularly with your advisor to be aware of changes and curriculum details which are not incorporated on this form.*

## MAJOR SEQUENCE AND DEGREE REQUIREMENTS

Major: **BS BIOLOGY**  
 Option: **PRE-MEDICAL PROFESSIONS**  
 Major Field Requirements: **43.0 credits**  
 Other Requirements: **35.0-37.0credits**

When applicable, up to six of the **REQUIRED RELATED** courses may be credited toward the Liberal Arts Core subject to normal distribution rules.

| Course No.  | Short Title                  | C.H.    | Grade | Course No.   | Short Title               | C.H. | Grade |
|---|------------------------------|---------|-------|--|---------------------------|------|-------|
| <b>REQUIRED BIOLOGY COURSES (25.0-26.0 credits)</b>   |                              |         |       | <b>REQUIRED RELATED (35.0-37.0 credits)</b>  |                           |      |       |
| BIOL 101  | Foundations of Biology       | 4.0     | _____ | <b>Chemistry (20.0 credits)</b>  |                           |      |       |
| BIOL 211  | Concepts of Zoology          | 4.0     | _____ | CHEM 111*  | Introductory Chemistry I  | 4.0  | _____ |
| BIOL 221  | Concepts of Botany           | 4.0     | _____ | CHEM 112*  | Introductory Chemistry II | 4.0  | _____ |
| BIOL 343  | Ecology & Evolution          | 4.0     | _____ | CHEM 231*  | Organic Chemistry I       | 4.0  | _____ |
| BIOL 362  | Cell & Development           | 4.0     | _____ | CHEM 232*  | Organic Chemistry II      | 4.0  | _____ |
| BIOL 364  | Genetics & Molecular Biology | 4.0     | _____ | CHEM 326   | Biochemistry I            | 4.0  | _____ |
| BIOL 472  | Seminar in Biology           | 1.0-2.0 | _____ | *Must earn a C- or better in these CHEM courses before completing CHEM 326.  |                           |      |       |
| <b>Pre-professional Courses (6.0 - 8.0 credits)</b>   |                              |         |       | Note: Students may complete a Chemistry or Biochemistry minor with the addition of CHEM 265 or CHEM 327 & 328, respectively. |                           |      |       |
| BIOL 254  | Human A & P I                | 4.0     | _____ | <b>Mathematics (7.0 credits)</b>   |                           |      |       |
| BIOL 255  | Human A & P II               | 4.0     | _____ | MATH 161   | Calculus I                | 4.0  | _____ |
| <b>--OR--</b>   |                              |         |       | MATH 235   | Survey of Statistics      | 3.0  | _____ |
| BIOL 318  | Comp Vert Anatomy            | 3.0     | _____ | <b>--OR--</b>  |                           |      |       |
| BIOL 435  | Animal Physiology            | 3.0     | _____ | BIOL 375*  | Biometry                  | 3.0  | _____ |
| <b>BIOLOGY ELECTIVES (9.0-12.0 credits)</b><br>(to bring total BIOL credits to 43)  |                              |         |       | *Credits for BIOL 375 do not count towards Biology major requirements.   |                           |      |       |
| BIOL 300  | Biology Co-Op                | 3.0     | _____ | <b>Physics (8.0-10.0 credits)</b>  |                           |      |       |
| BIOL 352  | Nutritional Science          | 3.0     | _____ | PHYS 131   | Physics I with Algebra    | 4.0  | _____ |
| BIOL 363  | Medical Microbiology         | 3.0     | _____ | PHYS 132   | Physics II with Algebra   | 4.0  | _____ |
| BIOL 415  | Mammalogy                    | 3.0     | _____ | <b>--OR--</b>  |                           |      |       |
| BIOL 417  | Parasitology                 | 3.0     | _____ | PHYS 231   | Physics I with Calculus   | 5.0  | _____ |
| BIOL 437  | Endocrinology                | 3.0     | _____ | PHYS 232   | Physics II with Calculus  | 5.0  | _____ |
| BIOL 438  | Neurobiology                 | 3.0     | _____ | <b>Suggested General Education Courses</b>   |                           |      |       |
| BIOL 454  | Immunology                   | 2.0     | _____ | PSYC 100, PSCY 227/228, PHIL 100 and SOCI 101 are recommended for students planning to take the MCAT.                        |                           |      |       |
| BIOL 461  | Microbiology                 | 3.0     | _____ |  |                           |      |       |
| BIOL 462  | Molecular Biology            | 4.0     | _____ |  |                           |      |       |
| BIOL 463  | Virology                     | 3.0     | _____ |  |                           |      |       |
| BIOL 465  | Developmental Biology        | 3.0     | _____ |  |                           |      |       |
| BIOL 467  | Human Genetics               | 3.0     | _____ |  |                           |      |       |
| BIOL 498/<br>499  | Independent Study/<br>Thesis | 1.0-3.0 | _____ |  |                           |      |       |
| *Note: Students interested in Veterinary School are encouraged to take BIOL 318 & 435; students interested in Dental School are encouraged to take BIOL 461, 454 & 465; students interested in Pharmacy programs should take BIOL 461 & 454; students interested in Physician Assistant programs should take BIOL 461 & 454 and an additional 1-3 credits of microbiology courses or independent study. |                              |         |       |  |                           |      |       |