

BIOLOGY, B.S. - PRE-MEDICAL PROFESSIONS OPTION

As with all of its preprofessional programs, Millersville University believes that undergraduate training for medical school should focus on a well-rounded education. Therefore, premedical professional option students are required to take a core foundation of liberal arts courses. That foundation, in combination with the recommended scientific courses, prepares premedical students at Millersville for the rigors of medical education. It also challenges them to develop both their abilities and perceptions so they are primed for the diagnostic and ethical demands of medical practice.

Major in Biology, BS

| Code | Title | Hours |
|--|---|-----------|
| CORE COURSES (C- or higher required) | | 26 |
| | Foundations of Biology - See Appendix 1 | |
| BIOL 211 | Concepts of Zoology | |
| BIOL 221 | Concepts of Botany | |
| BIOL 343 | Principles of Ecology & Evolution | |
| BIOL 362 | Cell and Developmental Biology | |
| BIOL 364 | Foundations of Genetics & Molecular Biology | |
| BIOL 472 | Seminar In Biology | |
| Option in Pre-Medical Professions - See separate block | | |
| Total Hours | | 26 |

Appendix 1. Foundations of Biology

| Code | Title | Hours |
|-------------------------------------|------------------------|-------|
| Foundations of Biology C- or Higher | | 4 |
| BIOL 101 | Foundations of Biology | |

Concentration in Pre-Medical Professions

| Code | Title | Hours |
|---|--------------------------------|-------|
| PRE-PROFESSIONAL COURSES - Choose 1 of the following options 1-2: | | 7-8 |
| Option 1. Human Anatomy Physiology I and II | | |
| BIOL 254 | Human Anatomy & Physiology I | |
| BIOL 255 | Human Anatomy & Physiology II | |
| Option 2. Comp Vert Anatomy and Animal Physiology | | |
| BIOL 318 | Comparative Vertebrate Anatomy | |
| BIOL 435 | Animal Physiology | |
| BIOLOGY ELECTIVES (9-12 to bring total BIOL credits to 43 minimum) - Choose 9 hours from: | | 9 |
| BIOL 300 | Co-Op Ed Experience in Biol | |
| BIOL 352 | Nutritional Science | |
| BIOL 361 | Microbiology | |
| BIOL 363 | Medical Microbiology | |
| BIOL 415 | Mammalogy | |
| BIOL 437 | Endocrinology | |
| BIOL 438 | Neurobiology | |
| BIOL 454 | Immunology | |
| BIOL 462 | Molecular Biology | |
| BIOL 463 | Virology | |

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|----------|------------------------------|
| BIOL 465 | Developmental Biology |
| BIOL 467 | Human Genetics:Analysis/Apps |
| BIOL 489 | Honors Course |
| BIOL 498 | Independent Study |
| BIOL 499 | Departmental Honors |

Students interested in Veterinary School are encouraged to take BIOL 318, 361, 435; Students interested in Dental School are encouraged to take BIOL 361, 454, 465; Students interested in Pharmacy programs should take BIOL 361 454; Students interested in Physician Assistant programs should take BIOL 361 454.

Total Hours **16-17**

Req Related for Biology, BS

| Code | Title | Hours |
|---|-------|-------|
| For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework. | | |

CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

| | | |
|---|--------------------------|---|
| CHEM 111 | Introductory Chemistry 1 | 4 |
| CHEM 112 | Introductory Chemistry 2 | 4 |
| Organic Chemistry I (C- minimum) and II | | 8 |
| CHEM 231 | Organic Chemistry 1 | |
| CHEM 232 | Organic Chemistry 2 | |
| CHEM 326 | Biochemistry 1 | 4 |

MATHEMATICS FOR PRE-MEDICAL PROFESSIONS

| | | |
|---|----------------------|---|
| MATH 161 | Calculus 1 | 4 |
| Biometry or Survey of Statistics - Choose 1 of the following: | | 3 |
| BIOL 375 | Biometry | |
| MATH 235 | Survey of Statistics | |

PHYSICS

| | | |
|--|-------------------------|------|
| undefined - Choose 1 of the following options 1-2: | | 8-10 |
| Option 1. Physics with Algebra | | |
| PHYS 131 | Physics 1 with Algebra | |
| PHYS 132 | Physics 2 with Algebra | |
| Option 2. Physics with Calculus | | |
| PHYS 231 | Physics 1 with Calculus | |
| PHYS 232 | Physics 2 with Calculus | |

RECOMMENDED GENED FOR MCAT

PSYC 100, 227/228, PHIL 100 and SOCY 101 are recommended Gen Ed courses for students planning to take the MCAT

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|---|--------------|
| PSYC 100, 227, 228 (G3), PHIL 100 (G1), and SOCY 101 (G3) | 0 |
| Total Hours | 35-37 |