**Biology | Major**

**PROGRAM HIGHLIGHTS IN BRIEF**

Alvernia is a Franciscan university dedicated to academic achievement, community service and the professional and personal fulfillment of our students. Biology classes are taught by dedicated faculty, committed to the ideal that scientific study is a human endeavor that actively works to improve our lives and to advance the world for a better and more sustainable future.

Biology courses are taught in the O’Pake Science Center, a $9.3 million state-of-the-art teaching and research facility that opened in 2006. The O’Pake Science Center added 31,582 square feet of classroom, laboratory, and faculty office space to Alvernia’s campus. Two floors of laboratory and classrooms space, all of which have the latest in educational technology, allow students to employ a variety of laboratory equipment for use in examining cells and tissues, exploring human physiology, isolating and manipulating DNA, growing and analyzing microbes like bacteria, as well as the study and propagation of plants. Studies involving biomedical and environmental analysis are facilitated by instrumentation including UV/Vis, infrared and fluorescence spectrophotometers, HPLC, GC, GC-Mass Spec. and Raman spectrometry, Flame/Graphite-Furnace Atomic Analyzer, as well as a high energy LASER-coupled spectrometer.

**ACADEMIC QUALITY**

The Biology program provides students with a solid base of knowledge of fundamental biological concepts and principles, as well as the skills to put that knowledge to use in a variety of academic or professional pursuits.

Biology students have the opportunity to develop scientific skills and techniques within a challenging academic program that prepares them for opportunities in environmental science, biomedical research, biotechnology industry, as well as graduate study in biology or a variety of health-related professions.

The Biology program also offers coursework that can give qualifying students an opportunity to enter either Temple University Kornberg School of Dentistry or the Reading Hospital Clinical Medical Technology program after completion of their third year at Alvernia. Students accepted into either of these programs acquire their BS in Biology from Alvernia after successful completion of their first year of professional study.

**INTERNSHIP OPPORTUNITIES**

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<th>Alliance for a Clean Environment</th>
<th>Institute of Paper Science &amp; Technology</th>
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<td>American Assoc. for the Advancement of Science</td>
<td>Lehigh Valley Hospital</td>
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<td>Atlanta Semester</td>
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<td>Berks County Conservancy</td>
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<td>Bristol-Myers Squibb</td>
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<td>Capital Semester Internship Program</td>
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<td>Chicago Botanic Garden</td>
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<td>Conservancy of Southwest Florida</td>
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<td>Eco Hill Outdoor School</td>
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<td>Environmental Protection Agency</td>
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<td>Hawk Mountain Sanctuary</td>
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<td>Institute for Experiential Learning</td>
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**CAREER SUCCESS**

Biology graduates from Alvernia have pursued further study in podiatry, immunology, dentistry, optometry, medicine and education. They are employed by such reputable companies and research facilities as Wyeth-Ayerst Laboratories, GlaxoSmithKline, Carpenter Technology Corporation, Harvard University, Thomas Jefferson University and The Graduate Hospital of Philadelphia; as well as by virtually every hospital in Berks County and many in Lebanon, Lancaster, York, Pottsville and Philadelphia. They serve society as physicians, dentists, teachers, pharmacists, research associates and technologists.
Biology Major

**Biology Core Requirements (22 credits)**
- BIO 103  Principles of Biology w/Lab
- BIO 104  Zoology w/Lab
- BIO 221  General Microbiology w/Lab
- BIO 303  Genetics
- BIO 304  Cell Biology
- BIO 309  Molecular Genetics Lab
- BIO 311  Cellular Physiology Lab
- BIO 402  Senior Seminar

**Math/Science Requirements (26 credits)**
- CHE 104/110  General Chemistry I w/Lab
- CHE 105/111  General Chemistry II w/Lab
- CHE 107  Laboratory Safety
- CHE 201/210  Organic Chemistry I w/Lab
- CHE 202/211  Organic Chemistry II w/Lab
- MAT 209  Probability & Statistics
- MAT 220  Math/Stats Computer Lab
- MAT 230  Calculus I
- PHY 110  General Physics I w/Lab
- PHY 111  General Physics II w/Lab

**Biology Research/Internship (6 credits)**
- BIO 480  Biology Internship  -OR-
- BIO 316  Intro to Biology Research
- BIO 317  Experimentation in Biology
- BIO 407  Data Analysis in Biology Research

**Biology Electives (18-24 credits)**
- BIO 107/117  Anatomy & Physiology I w/lab
- BIO 108/118  Anatomy & Physiology II w/lab
- BIO 205  Botany w/Lab
- BIO 208  Neuroscience for Rehab
- BIO 211  Kinesiology w/Lab
- BIO 216  Nutrition
- BIO 320  Ecology w/Lab
- BIO 405  Pharmacology
- BIO 409  Immunology
- BIO 410  Pathophysiology
- BIO 290  Vertebrate Physiology
- BIO 290  Histology
- BIO 390  Ornithology
- BIO 390  Biodiversity
- BIO 390  Endocrinology
- BIO 390  Human Development
- BIO 490  Aquatic Biology
- BIO 490  Environmental Law & Policy
- CHE 390  Environmental Chemistry

Biology-Secondary Education Major

**Biology Requirements (28 credits)**
- BIO 103  Principles of Biology w/Lab
- BIO 104  Zoology w/Lab
- BIO 115  Human Form and Function
- BIO 205  Botany w/Lab
- BIO 221  General Microbiology w/Lab
- BIO 303  Genetics
- BIO 320  Ecology w/Lab
- BIO 330  Biotechnology
- COM 270  ESL Teachers

**Required Liberal Arts Core**
43 credits to include:
- MAT 209  Probability and Statistics
- PSY 101  Introductory Psychology

**Related Requirements (29 credits)**
- CHE 104/110  General Chemistry I w/Lab
- CHE 105/111  General Chemistry II w/Lab
- CHE 107  Laboratory Safety
- CHE 201/210  Organic Chemistry I w/Lab
- MAT 230  Calculus I
- PHY 103  Earth Science
- PHY 110  General Physics I w/Lab
- PSY 210  Educational Psychology

**Secondary Education Major:**
- ED 200  Foundations of Education
- ED 206  Field Experience I
- ED 306  Field Experience II
- ED 313  Classroom Management
- ED 330  Curriculum Design and Assessment
- ED 333  Literacy Methods for Secondary Inclusive Classroom
- ED 416  Field Experience III
- ED 434  Methods of Teaching Secondary Science
- ED 470  Student Teaching
- ED 472  Student Teaching Seminar
- SPE 100  Introduction to Exceptionalities in Children and Youth

**CONTACT INFORMATION**
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