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

| Alliance for a Clean Environment | Institute of Paper Science & Technology |
| American Assoc. for the Advancement of Science | Lehigh Valley Hospital |
| Atlanta Semester | National Science Foundation |
| Berks County Conservancy | Newfound Harbor Marine Institute |
| Bristol-Myers Squibb | PA Dept. of Conservation and Natural Resources |
| Capital Semester Internship Program | Philadelphia Zoo |
| Chicago Botanic Garden | Rainforest Action Network |
| Conservancy of Southwest Florida | Reading Public Museum |
| Echo Hill Outdoor School | Rodale Press |
| Environmental Protection Agency | Roving Nature Center, Inc. |
| Hawk Mountain Sanctuary | Schuylkill Riverkeepers |
| Institute for Experiential Learning | Virginia Marine Science Museum |

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 Pfizer Inc., 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.
CURIUM OVERVIEW

Biology Major (80-89 credits)

Biology Core Requirements (28 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
BIO 480   Biology Internship -OR-
BIO 316   Intro to Biology Research -OR-
BIO 317   Experimentation in Biology -OR-
BIO 407   Data Analysis in Biology Research

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 Electives (18-24 credits)
BIO 107/117  Anatomy & Physiology I w/lab
BIO 108/118  Anatomy & Physiology II w/lab -OR-
BIO 115/116  Human Form & Function 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

Alternate Special Topics
BIO 290   Environmental Earth Science
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 203   Social Foundations
ED 206   Field Experience I
ED 209   Planning, Instruction, & Assess
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
COM 270   ESL Leaners

CONTACT INFORMATION
Elizabeth Gardner, Ph.D.
Chair of Mathematics and Sciences
1-610-796-8247
elizabeth.gardner@alvernia.edu

Office of Admissions
1-610-796-8269
admissions@alvernia.edu
400 Saint Bernardine Street • Reading, PA 19607 • 1.888.ALVERNIA • www.alvernia.edu