Chemistry | Major

“In chemistry, it’s all about your lab technique. At Alvernia I learned how to do chemistry correctly and efficiently. I learned to work at a quick pace and think ahead.”—Jason Betz ’08, Adpen Laboratories, Jacksonville, FL

PROGRAM HIGHLIGHTS IN BRIEF
Alvernia is a Franciscan university dedicated to academic achievement, community service and the professional and personal fulfillment of our students. Chemistry 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.

Chemistry courses are taught in the O’Pake Science Center. The Science Center has two floors of laboratory/classroom space, all of which have the latest in educational technology, allowing students to use a variety of laboratory materials and equipment for use in performing chemical synthesis, exploring physical and chemical properties of chemical compounds, examining chemical structure and reactivity. The application of modern analytical tools to chemical, biochemical and forensic investigations is 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 Chemistry program provides students a solid background in the fundamentals of chemical synthesis and analysis. Students get extensive exposure to the theoretical and practical aspects of chemistry, as well as the knowledge and skills essential to pursue opportunities in chemical research and development, environmental science, pharmaceutical chemistry, forensic science and many other health/industry related careers.

Students have the opportunity to develop practical experience through either internships or guided research projects, allowing students to focus on a selected scientific problem or a prospective field of employment.

The Chemistry program also offers coursework that can give qualifying students an opportunity to enter the Reading Hospital Clinical Medical Technology program after completion of their third year at Alvernia. Students accepted into this program acquire their BS in Chemistry from Alvernia after successful completion of a year of clinical study.

INTERNSHIP OPPORTUNITIES
Clinical Laboratories, Inc. United States Medical Research Institute of Chemical Defense
Puritan Products, Inc. PA Department of Environmental Protection
Drug Scan
Lancaster Laboratories

Students that wish to gain laboratory and research experience through their internship are encouraged to apply for positions available by way of the National Science Foundations-Research Experience for Undergraduates program and its participating institutions. Recently students have participated in programs at Louisiana State University, the University of Southern California and Texas A&M.

CAREER SUCCESS
Chemistry graduates are employed by such reputable companies and research facilities as the Walter Reed Army Institute of Research; the Wistar Institute; Johnson & Johnson; Lancaster Laboratories; Spotts, Stevens & McCoy; Lockheed Martin; Chruch & Dwight and National Medical Services. They serve society as optometrists, pharmacists, teachers, research technicians, scientific editors, and medical technologists. Many students have also gone onto graduate and professional schools such as Villanie University, University of Southern California and Temple University Dental School. Alvernia’s Career Services staff provides assistance with resume preparation, interview skills and job and graduate school searches.
CURRICULUM OVERVIEW

Chemistry Major (63-66 credits)

CHE 104  General Chemistry I
CHE 105  General Chemistry II
CHE 107  Laboratory Safety
CHE 110  General Chemistry I Lab
CHE 111  General Chemistry II Lab
CHE 201  Organic Chemistry I
CHE 202  Organic Chemistry II
CHE 210  Organic Chemistry I Lab
CHE 211  Organic Chemistry II Lab
CHE 212  Analytical Chemistry w/Lab
CHE 221  Instrumental Analysis
CHE 301  Physical Chemistry I
CHE 302  Physical Chemistry II
CHE 303  Physical Chemistry Lab
CHE 402  Seminar
CHE 480  Chemistry Internship
CHE 406  Advanced Inorganic Chemistry

Electives (6-9 credits)

CHE 401  Biochemistry
CHE 403  Spectroscopic Methods
CHE 404  Advanced Organic Chemistry
CHE 405  Forensic Chemistry w/Lab
CHE 410  Biochemistry Laboratory
MAT 209  Probability & Statistics
MAT 232  Calculus III

Chemistry Research/Internship (6 credits)

CHE 480  Chemistry Internship  -OR-
CHE 316  Intro to Chemistry Research  -AND-
CHE 317  Experimentation in Chemistry  -AND-
CHE 407  Data Analysis in Chemistry Research

Math/Science Requirements (17-20 Credits)

PHY 110  General Physics I w/Lab
PHY 111  General Physics II w/Lab
MAT 131  Precalculus (recommended)
MAT 220  Math/Stats Computer Lab
MAT 230  Calculus I
MAT 231  Calculus II

Chemistry-Secondary Education (91 credits)

CHE 104  General Chemistry I
CHE 105  General Chemistry II
CHE 107  Laboratory Safety
CHE 110  General Chemistry I Lab
CHE 111  General Chemistry II Lab
CHE 201  Organic Chemistry I
CHE 202  Organic Chemistry II
CHE 210  Organic Chemistry I Lab
CHE 211  Organic Chemistry II Lab
CHE 212  Analytical Chemistry w/Lab
CHE 301  Physical Chemistry I
CHE 302  Physical Chemistry II
CHE 401  Biochemistry
CHE 410  Biochemistry Laboratory

Secondary Education Major (33 credits)

ED 203  Social Foundations for the Middle Learner
ED 206  Field Experience I
ED 209  Planning, Instruction & Assessment
ED 306  Field Experience II
ED 313  Classroom Management
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  Overview of Human Exceptionalities

Program requirements are subject to change.
Contact your admissions counselor for the most up to date information.

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