



Chemistry | Major

"In chemistry, it's all about your lab technique. At Alvernia I learned how to do chemistry properly 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, a \$9.3 million state-of-the-art teaching and research facility, which 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/classroom space, all of which have the latest in educational technology, allow students to employ 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

Berks County Coroner's Office
Clinical Laboratories, Inc.
Georgia Bureau of Investigation
Lower Allen Township Police Department
Maternal Fetal Medicine
Puritan Products, Inc.

Queen Anne's County Office of the Sheriff
Schuylkill County Coroner's Office
United States Medical Research Institute of
Chemical Defense
Western Correctional Institution

CAREER SUCCESS

Chemistry graduates are employed by such reputable companies and research facilities as the Walter Reed Army Institute of Research; the Wistar Institute; Ortho Pharmaceutical Co.; Crompton & Knowles; Spotts, Stevens & McCoy; Warner Lambert, Inc.; and National Medical Service. They serve society as optometrists, pharmacists, teachers, research technicians, scientific editors, microbiologists, and medical technologists. 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

Electives (6-9 credits)

CHE 401	Biochemistry
CHE 403	Spectroscopic Methods
CHE 404	Advanced Organic Chemistry
CHE 405	Forensic Chemistry w/Lab
CHE 406	Advanced Inorganic Chemistry
CHE 410	Biochemistry Laboratory

Chemistry Research/Internship (6 credits)

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

Math/Science Requirements (22 Credits)

PHY 110	General Physics I w/Lab
PHY 111	General Physics II w/Lab
MAT 131	Precalculus (<i>recommended</i>)
MAT 209	Probability & Statistics
MAT 220	Math/Stats Computer Lab
MAT 230	Calculus I
MAT 231	Calculus II
MAT 332	Precalculus III

Chemistry-Secondary Education

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 303	Physical Chemistry Lab
CHE 401	Biochemistry
CHE 410	Biochemistry Laboratory

Required Liberal Arts Core to include:

PSY 101	Introductory Psychology
Related Requirements	
BIO 103	Principles of Biology
BIO 104	Zoology
MAT 230	Calculus I
MAT 231	Calculus II
PHY 110	General Physics I w/Lab
PHY 111	General Physics II w/Lab
PSY 210	Educational Psychology

Secondary Education Major

ED 200	Foundations of Education
ED 206	Field Experience I
ED 209	Planning, Instruction & Assessment
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	Overview of Human Exceptionalities
COM 270	ESL Teachers

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