CHEMISTRY: BIOCHEMISTRY TRACK

16½ course units, including:

BIO 1204	Integrated Concepts of Biology: Molecules and Cells
BIO 3034	Molecular Genetics of Eukaryotes *or*
BIO 3044	Molecular Genetics of Bacteria
CHEM 1055	Principles of Chemistry I
CHEM 1065	Principles of Chemistry II
CHEM 2155	Organic Chemistry I
CHEM 2165	Organic Chemistry II
CHEM 3022	Advanced Experimental Techniques I *or*
CHEM 3032	Advanced Experimental Techniques II
CHEM 3084	Biochemistry
CHEM 3115	Quantitative Analytical Chemistry
CHEM 3165	Physical Chemistry: Thermodynamics, Kinetics and Statistical Mechanics
CHEM 4412	Senior Research Seminar in Chemistry I
CHEM 4422	Senior Research Seminar in Chemistry II

1 additional biology or chemistry elective

In addition, the following allied courses are required:

MATH 1304	Calculus I
MATH 1324	Calculus II
PHYS 2115	University Physics I
PHYS 2125	University Physics II

Students who choose the biochemistry track may not major or minor in either biology or chemistry.

To become certified to teach chemistry, students must complete Chemistry Major and Education Minor for Secondary Certification.

CHEMISTRY

TRANSYLVANIA UNIVERSITY

Office of Admissions
300 North Broadway
Lexington, KY 40508
(800) 872-6798
transy.edu

TRANSYLVANIA UNIVERSITY

ADM1487-0816

ABOUT THE MAJOR:

As a chemistry student at Transylvania, you'll become skilled at problem solving, develop a strong foundation in all areas of chemistry and gain an excellent foundation for graduate studies or a scientific career.

A degree in chemistry prepares you for a career in biochemistry, chemical engineering, environmental science, medicine and other health care areas. If you're interested in pursuing an advanced degree in chemical engineering, you may want to consider Transylvania's engineering options.

Transylvania students have hands-on access to a variety of instruments, including a high-field nuclear magnetic resonance (NMR) spectrometer, mass spectrometer, gas chromatograph, ultraviolet and Fourier-transformed infrared (FTIR) spectrophotometers, high-performance liquid chromatograph (HPLC), atomic absorption (AA) spectrometer and Raman spectrometer. At larger universities, undergraduate students may not have access to this variety of equipment.

Our students have taken advantage of summer research experiences at Stanford, Harvard, the Mayo Clinic, the University of North Carolina, the University of Kentucky and Texas A&M University.

Students may also choose the biochemistry track, focusing on the chemistry of living systems. Graduates have gone on to professional research in fields including bioethics and immune systems. Or they can major in teaching chemistry, which when paired with an education minor can earn certification to teach high school chemistry.

"We give each student a lot of attention at Transylvania, and in a field like chemistry that's really important."

Bob Rosenberg,
professor of chemistry

COURSES OF SPECIAL INTEREST:

Environmental Chemistry
Forensic Chemistry
Nuclear Chemistry
Quantitative Analytical Chemistry
Design Molecules by Computer
Advanced Experimental Techniques

OPPORTUNITIES IN THE MAJOR:

American Chemical Society student affiliate
Research experiences both on and off campus
Regional and national research conferences

POSITIONS OUR GRADUATES HAVE HELD:

Bioanalytical chemist, Eli Lilly
Senior chemist, Parke Davis and Company
Medical doctor, University of Louisville Medical School
Professor, University of Michigan
Mass spectroscopist, Pfizer Research and Development
Research toxicologist, Shell Oil
Quality control, Buffalo Trace Distillery

WHERE OUR GRADUATES HAVE STUDIED:

Yale University
Harvard University
Stanford University
Johns Hopkins University
University of California–Los Angeles
University of Chicago
University of Wisconsin
University of North Carolina–Chapel Hill

POSSIBLE CAREER OPTIONS:

College professor
Laboratory technician
Medical researcher
Pharmaceutical sales representative

FACULTY:

Eva Csuhai, Program Director
Professor of Chemistry, Chief Pre-Health Advisor
ecsuhai@transy.edu

Jessie L. Brown, Assistant Professor of Chemistry
jlbrown@transy.edu

Robert Rosenberg, Professor of Chemistry
rrosenberg@transy.edu

Kyle Schnitzenbaumer, Assistant Professor of Chemistry
kschnitzenbaumer@transy.edu

COURSES:

CHEMISTRY MAJOR

15 course units, including:

CHEM 1055	Principles of Chemistry I
CHEM 1065	Principles of Chemistry II
CHEM 2155	Organic Chemistry I
CHEM 2165	Organic Chemistry II
CHEM 3014	Inorganic Chemistry
CHEM 3022	Advanced Experimental Techniques I
CHEM 3032	Advanced Experimental Techniques II
CHEM 3115	Quantitative Analytical Chemistry
CHEM 3155	Physical Chemistry: Quantum Mechanics
CHEM 3165	Physical Chemistry: Thermodynamics, Kinetics and Statistical Mechanics
CHEM 4412	Senior Research Seminar in Chemistry I
CHEM 4422	Senior Research Seminar in Chemistry II

1 additional 3000-level chemistry course

Allied courses:

MATH 1304	Calculus I
MATH 1324	Calculus II
PHYS 2115	University Physics I
PHYS 2125	University Physics II

CHEMISTRY MINOR

6 course units, including:

CHEM 1055	Principles of Chemistry I
CHEM 1065	Principles of Chemistry II
CHEM 2155	Organic Chemistry I
CHEM 2165	Organic Chemistry II

2 additional 3000-level chemistry courses

Courses for the chemistry major/biochemistry track are continued on back.