

CHEMISTRY: BIOCHEMISTRY TRACK

15½ 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



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.

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
rosenberg@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.



"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