

CHEMISTRY: BIOCHEMISTRY TRACK

16.5 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 I: Core Concepts
- CHEM 4412 Senior Research Seminar I
- CHEM 4422 Senior Research Seminar 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 both the chemistry major and the education minor for secondary certification.



TRANSYLVANIA UNIVERSITY

Office of Admissions

300 North Broadway
Lexington, KY 40508
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CHEMISTRY

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 University, Harvard University, 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
Quantum Mechanics
Instrumental Analysis
Quantitative Analytical Chemistry

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:

Indiana University
Harvard University
Stanford University
University of Arkansas
University of Wisconsin
University of North Carolina—Chapel Hill
Vanderbilt University
Virginia Tech

POSSIBLE CAREER OPTIONS:

College professor
Laboratory technician
Medical researcher
Pharmaceutical sales representative

FACULTY:

Robert Rosenberg, Program Director
Professor of Chemistry
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Jessie L. Brown, Associate Professor of Chemistry
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Eva Csuhai, Professor of Chemistry
Chief Pre-Health Advisor
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Kyle Schnitzenbaumer, Associate Professor of Chemistry
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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 3165 Physical Chemistry I: Core Concepts
CHEM 3175 Physical Chemistry II: Applications
CHEM 4412 Senior Research Seminar I
CHEM 4422 Senior Research Seminar 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

