

**Chair and William Greenleaf
Eliot Professor of Chemistry**
Joseph J.H. Ackerman

**Charles Allen Thomas
Professor of Chemistry**
Jacob Schaefer

**James S. McDonnell Professor
of Chemistry**
Karen L. Wooley

Professors

William E. Buhro
Peter P. Gaspar
Michael L. Gross
J. Dewey Holten
Alfred G. Hortmann
T. Tom Lin
Ronald A. Lovett
Edward S. Macias
Kevin D. Moeller
Demetrios Sarantitis
Lee G. Sobotka
John-Stephen A. Taylor
Mark S. Wrighton

Professors Emeriti

Alfred M. Holtzer
Joseph L. Kurz
Samuel I. Weissman
Robert Yaris

Associate Professor

John R. Bleeke
Richard A. Loomis

Assistant Professors

Vladimir Birman
Lev D. Gelb
Sophia E. Hayes
T. Joseph Kappock
Thomas P. Vaid
Amy V. Walker

Research Associate Professors

Robert Charity
Christine Kirmaier
Lynda McDowell

Chemistry

Graduate study is offered leading to the A.M. and Ph.D. degrees in chemistry. Active research programs are available in organic and bioorganic, polymer, physical and biophysical, inorganic and organo-metallic, nuclear and radiochemistry, computational and environmental chemistry. Entering students normally have completed an undergraduate major in chemistry and are requested to present Graduate Record Examination scores in verbal, quantitative and advanced chemistry with their admission materials.

In addition to the University requirements stated earlier in this bulletin, the departmental requirements for the Ph.D. degree include (a) an average of B in all course work, exclusive of research, (b) satisfactory performance on written candidacy examinations, (c) preparation of a prethesis paper or oral presentation in the area of research selected for the dissertation, (d) demonstration of ability to carry out independent research, with the preparation and defense of an acceptable dissertation, (e) satisfactory performance in teaching assistant assignments and (f) satisfactory performance on a laboratory safety examination. A more detailed description of degree requirements is available from the department office. For admissions information call (314) 935-6550.

Chem

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| 400.... Physical Sciences in 12 Problems 1 unit. | 459 Organometallic Chemistry 3 units. |
| 401.... Physical Chemistry I 3 units. | 461 Inorganic Chemistry 3 units. |
| 402.... Physical Chemistry II 3 units. | 464 Inorganic Biochemistry 3 units. |
| 405.... Spectroscopic Analysis 3 units. | 465 Solid-State and Materials Chemistry 3 units. |
| 435 Nuclear and Radiochemistry Laboratory 3 units. | 470 Inorganic Chemistry Lab 3 units. |
| 436 Radioactivity and Its Applications 3 units. | 475 Chemical Biology 3 units. |
| 438 Radiopharmaceutical Chemistry 2 units. | 476 The Chemistry of Biological Membranes 3 units. |
| 445 Instrumental Methods in Physical Chemistry 3 units. | 490 Introduction to Research 6 units maximum. |
| 451 Organic Chemistry III 3 units. | 500 Independent Work 6 units maximum. |
| 452 Synthetic Polymer Chemistry 3 units. | 515 Biological Chemistry Seminar 1 unit. |
| 453 Bio-organic Chemistry 3 units. | 520 Nucleic Acid Chemistry 3 units. |
| 456 Biochemistry 3 units. | 540 Inorganic/Organometallic Chemistry Seminar 1 unit. |
| 458 Chemical Reaction Mechanism Journal Club 1 unit. | 541 Advanced Inorganic Chemistry 3 units. |

Joint Professors

George W. Gokel
Richard W. Gross
Michael J. Welch

Adjunct Professors

Mark S. Conradi
Denis Forster
David J. Sloop
Dennis Riley

- 542 **Special Topics in Inorganic Chemistry** 3 units.
- 550 **Mass Spectrometry** 3 units.
- 5511 ... **Mechanistic Organic Chemistry** 3 units.
- 554 **Molecular Orbital Theory** 3 units.
- 555 **Special Topics in Organic Chemistry** Variable credit.
- 556 **Kinetics and Mechanisms** 3 units.
- 557 **Advanced Organic Synthesis** 3 units.
- 558 **Spectral Methods in Organic Chemistry** 3 units.
- 559 **Organic Chemistry Seminar** 1 unit.
- 562 **Statistical Thermodynamics** 3 units.
- 571 **Quantum Chemistry and Spectra** 3 units.
- 576 **Magnetic Resonance** 3 units.
- 5762 ... **Electron Spin Resonance** 3 units.
- 577 **Physical Chemistry of Macromolecules** 3 units.
- 578 **Nuclear Magnetic Resonance Spectroscopy** 3 units.
- 580 **Special Topics in Physical Chemistry** 3 units.
- 581 **Advanced Quantum Chemistry** 3 units.
- 582 **Group Theory** 3 units.
- 584 **Molecular Spectroscopy** 3 units.
- 588 **Advanced Nuclear Magnetic Resonance** 3 units.
- 590 **Research**
Credit to be arranged.