Chemistry

Degrees Offered

- Master of Science
- Doctor of Philosophy

Nature of the Program

The Department of Chemistry offers graduate studies leading to the degrees of master of science and doctor of philosophy with research concentration in the areas of analytical, inorganic, organic, and physical chemistry. The master of science and doctor of philosophy degrees require completion of a research project which represents the principal component of the graduate program. The M.S. program is limited in scope and involves advanced coursework and a study of a problem in chemical research culminating in the preparation and oral defense of a M.S. thesis.

The Ph.D. program has a much wider scope than the M.S. program. Ph.D. students are expected to take a broad range of advanced coursework, both within and outside of the major area of interest. The major emphasis of the Ph.D. program is on research. A typical research problem may take several years to complete and involves many advanced techniques and concepts at the frontiers of chemical knowledge. The Ph.D. program culminates in the preparation and defense of the Ph.D. dissertation.

The program for the degree of doctor of philosophy reflects a flexible, research-oriented approach geared to develop the interests, capability, and potential of students. A program of courses is recommended to suit individual needs based on background and ability. These courses are classified as basic graduate courses, which present the essentials of a given discipline on an advanced level, and specialized graduate courses, which take one to the frontiers in a specific area of research. The course offerings are designed to provide guidelines from which students can launch their independent studies in preparation for candidacy examinations. Students are required to enroll in the departmental seminar program and attend special lectures and seminars offered by visiting scientists. Graduate students in the Ph.D. program are required to satisfactorily complete a minimum of three courses (three credits each) at the 500 to 700-level offered by the Department of Chemistry and distributed in at least two areas outside their major area of research. In addition, each major area in chemistry requires students in that area to enroll in basic graduate courses presenting the essentials of that discipline on an advanced level.

FACULTY

CHAIR

- Gregory Dudley - Ph.D. (Massachusetts Institute of Technology)

ASSOCIATE CHAIR

- Michelle Richards-Babb - Ph.D. (Lehigh University)

DIRECTOR OF GRADUATE STUDIES

- Brian Popp - Ph.D. (University of Wisconsin-Madison)

DIRECTOR OF UNDERGRADUATE STUDIES

- Betsy Ratcliff - Ph.D. (University of Binghamton-SUNY)

PROFESSORS

- Gregory Dudley - Ph.D. (Massachusetts Institute of Technology)
  Regular Graduate Faculty; Eberly Family Distinguished Professor; Chemical Synthesis, Organic Reaction Methodology, Medicinal Chemistry
- Terry Gullion - Ph.D. (William and Mary)
  Regular Graduate Faculty; Physical Chemistry, Solid State NMR, Biological Materials, Polymers
- Lisa Holland - Ph.D. (University of North Carolina-Chapel Hill)
  Regular Graduate Faculty; Micro-separations, High Throughput Drug Screening
- Fred L. King - Ph.D. (University of Virginia)
  Regular Graduate Faculty; Analytical Chemistry, Mass Spectrometry, Trace Elements, Gas-phase Chemistry
- Justin Legleiter - Ph.D. (Carnegie Mellon University)
  Regular Graduate Faculty; Biophysical Chemistry, Scanning Probe Microscopy
- Betsy Ratcliff - Ph.D. (University of Binghampton-SUNY)
  Chemical Education, Physical Chemistry
- Michelle Richards-Babb - Ph.D. (Lehigh University)
  Regular Graduate Faculty; Chemical Education

- Stephen Valentine - Ph.D. (Indiana University)
  Regular Graduate Faculty; Mass Spectrometric Analysis of Biomolecules

ASSOCIATE PROFESSORS

- Erin Battin - Ph.D. (Clemson University)
  Bioinorganic Chemistry
- Fabien Goulay - Ph.D. (Université of Rennes, France)
  Regular Graduate Faculty; Physical Chemistry, Laser Spectroscopy
- Peng Li - Ph.D. (Texas Tech University)
  Regular Graduate Faculty; Bioanalytical Chemistry
- Brian Popp - Ph.D. (University of Wisconsin-Madison)
  Regular Graduate Faculty; Organic and Organometallic Chemistry, Catalysis
- Joshua Osbourn - Ph.D. (University of Pittsburgh)
  Organic Chemistry
- Mark Tinsley - Ph.D. (Leeds University, England)
  Regular Graduate Faculty; Physical Chemistry, Nonlinear Dynamics
- Mingming Xu - Ph.D. (Ohio University)
  Analytical Chemistry

ASSISTANT PROFESSORS

- Hacer Karatas Bristow - Ph.D. (University of Michigan)
  Regular Graduate Faculty; Chemical Biology, Bioorganic and Medicinal Chemistry
- Brian Dolinar - Ph.D. (University of Wisconsin-Madison)
  Regular Graduate Faculty; Inorganic Chemistry
- Carolyn Kitchens - Ph.D. (University of Pittsburgh)
  Biochemistry
- David Mersing - Ph.D. (West Virginia University)
  Teaching Faculty; Physical Chemistry
- Brian Nichols - Ph.D. (West Virginia University)
  Organic Chemistry
- Tobi Odeleye - Ph.D. (South Dakota State University)
  Regular Graduate Faculty; Chemical Education
- Trina Perrone - Ph.D. (West Virginia University)
  Organic Chemistry

TEACHING INSTRUCTOR

- Mark Schraf - M.S. (West Virginia University)
  Analytical Chemistry

PROFESSORS EMERITI

- Harry Finklea - Ph.D. (California Institute of Technology)
- Charles Jaffe - Ph.D. (University of Colorado)
- Robert Nakon - Ph.D. (Texas A&M University)
- Jeffrey Petersen - Ph.D. (University of Wisconsin-Madison)
- Kenneth Showalter - Ph.D. (University of Colorado)
- Ronald Smart - Ph.D. (University of Michigan)
- Bjorn Soderberg - Ph.D. (Royal Institute of Technology, Sweden)
- Kung Wang - Ph.D. (Purdue University)

Admissions for 2025-2026

PH.D. IN CHEMISTRY

The Chemistry program admits students directly to the doctoral degree. Admitted students may transition to the M.S. in Chemistry during their studies. In addition to the university's general admission requirements (http://catalog.wvu.edu/graduate/graduateeducationatwestvirginiauniversity/#classificationstext), applicants to the Ph.D. program must hold a bachelor's degree in chemistry or a related field with a concentration in chemistry and an appropriate background in physics and mathematics, with an overall GPA of at least 3.0. The GRE is not required for admission to this program.

List of Admission Requirements:

- See the steps to apply for admissions and access the application here (https://graduateadmissions.wvu.edu/how-to-apply/).
- A personal statement discussing specific examples of the applicant's ability to write effectively, analyze complex situations, and complete quantitative analyses. The following topics should also be included in the statement: 1) why a career in chemistry, 2) how will a PhD in Chemistry help the applicant reach their professional goals, 3) why WVU Chemistry offers the best opportunity for achieving those future professional goals, and 4) which faculty member(s) and/or research area(s) the applicant wishes to pursue in the WVU Chemistry PhD program. Information about the Chemistry faculty and their research interests can be found here (https://www.chemistry.wvu.edu/directory/).
- A current curriculum vitae or resume that lists work experience, volunteer activities, internships, academic degrees and honors, and other accomplishments the applicant considers relevant.
- Three letters of recommendation from professional or academic references who can comment directly on the applicant's skills and experience.

International Applicants:

- See the steps to apply for admissions and access the application here (https://graduateadmissions.wvu.edu/how-to-apply/).
- International applicants should view additional requirements here (http://catalog.wvu.edu/graduate/graduateeducationatwestvirginiauniversity/#internationaltext) and here (https://graduateadmissions.wvu.edu/information-for/international-students/).
- English language proficiency is required in order to hold a graduate teaching assistantship. See here (https://elli.wvu.edu/testing-resources/english-proficiency-gtas/).

Application Deadline:

- The priority review deadline for all application materials for fall admission is January 1st.
- Applicants are typically notified of the committee's decision on or before February 1st.
- Completed applications for admission may be considered after the January 1st deadline on a space-available basis.
- The Chemistry program admits students for the Fall semester only.
- Exceptional applicants may be nominated by the Chemistry program for competitive University Fellowships. Qualified applicants will be notified if they are nominated. More information on WVU fellowships can be found here (https://graduateeducation.wvu.edu/finances/fellowships/).
- At this time, the Chemistry program is not accepting applications to the MS program.

For further information, please contact: Director of Graduate Studies, Chemistry.DGS@mail.wvu.edu.

Assistantships

All applicants will be considered for financial support in the form of graduate teaching assistantships (GTAs) and graduate research assistantships (GRAs). Graduate research assistantships are sometimes available through funded faculty member research. Students who qualify for available research assistantships will be made aware of these opportunities during the Chemistry New Graduate Student Orientation held prior to the beginning of the Fall term.

Certain application requirements may be waived based on a preliminary review of an application by the program.

Major Code: 1439

For specific information on the following program, please see the link to the right:

- Chemistry, M.S.

For specific information on the following program, please see the link to the right:

- Chemistry, Ph.D.

Degree Progress

All graduate students enrolled in at least one credit hour during the academic year must be provided with a written evaluation from their program following the end of each spring term. This requirement may be waived for students in good standing who are expected to graduate in spring or summer. Specific processes and timelines for each program's evaluation can be found in the graduate handbook. Annual evaluation may result in probation for students either not making adequate degree progress or failing to uphold professional standards. At the end of each academic semester, students are evaluated by the chemistry faculty to ensure timely progress in their degree programs.

MASTER'S BENCHMARKS

- Year 1: Form a Committee and Present the Program of Study
- Year 2+: Complete Coursework Requirement (Coursework and Thesis tracks)
- Year 2+: Submit Written Thesis and present Oral Thesis Defense (Thesis track).

DOCTORAL BENCHMARKS

- Year 1: Form a Committee and Present the Program of Study.
- Year 2: Complete the Written Research Progress Report and Present the Oral Research Progress Defense.
- Year 3+: Complete Yearly Meeting with Chemistry Committee Members.
- Year 3+: Complete the Original Research Proposal.
- Year 5+: Submit Written Dissertation and present Oral Dissertation Defense.

PROBATION

There are several reasons why a student may need to be placed on probation. These may include:

1) A documented violation of the student code of conduct (https://studentresponsibility.wvu.edu/campus-student-code/). Depending on the nature of the violation, either probation or dismissal without a probationary period may be appropriate.

2) Receiving an “Unsatisfactory” in Chemistry 797 (“Independent Research”) due to the failure to meet expectations established with their faculty research advisor.

3) A GPA below 2.75. If a student’s GPA is below a 2.75 for two consecutive semesters, the student may be dismissed from the program.