

IUP Graduate Handbook

Applied and Industrial Chemistry, MS

Madia Department of Chemistry

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Program Website <https://www.iup.edu/chemistry/grad/>

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Faculty and Staff

Dr. Colin Ashe. Conceptual Learning in Chemistry, Use of Comp

Dr. George Long. Laser spectroscopy; the use of computers in education including the development of on-line chemistry courses; Cognitive processes and teaching methods in chemical education.

Dr. Sudipta Majumdar. The goal of our research is to utilize the properties of proteins, peptides and DNA for developing biocatalyst and biosensors and methods in molecular biology and protein engineering tools, including, semi-rational and evolutionary approaches.

Dr. Sanda Andrada Maicaneanu. The goal of our research is to use various materials for water and wastewater treatment using photocatalytic processes.

Dr. Nathan McElroy. My current research consists at IUP deal with water quality, with a particular focus on the effects of Marcellus shale gas extraction in Lyndhurst, Pennsylvania. Since 2011, my students and I have been involved in a water monitoring project at the Beaver Run Reservoir in Westmoreland County.

Dr. Ronald See. Our research works to understand the physical basis for the local structure of a variety of chemical species. Currently, we are focusing on metal ligand coordination and organometallic compounds, as expressed in both discrete molecular and extended macromolecular arrays.

Dr. Hao Tang. Tang's research lab focuses on engineering aspects of capacitive desalination technology for water desalination; emerging disinfection by-products from drinking water; and, oil, fat, and grease removal from wastewater.

Dr. Jana Villemain. Using molecular biology and protein biochemistry to study the structure-function relationships of proteins; particularly focused on interactions between homologous recombination proteins in the DNA double-strand break pathway and proteins that appear to mediate it.

Admission

The following documents must be submitted and considered when applying:

- Online application
- \$60 nonrefundable application fee
- Bachelor's degree in a natural physical science or engineering program from an accredited institution with a GPA of 2.8 or higher. Coursework equivalent to at least 18 Chem(20) credit hours
- Official transcripts from all graduate institutions attended
- Written personal statement: One page describing your interest and qualifications for the program
- Two letters of recommendation
- Professional resume

For international Students: The minimum acceptable IELTS score is 6.0. TOEFL score requirement is 540 (paper-based) or 76 (Internet-based).

Graduate Admissions www.iup.edu/admissions/graduate/

For more information regarding Admission Classification and Provisional Admission for International Graduate Application, view the Graduate Catalog www.iup.edu/gradcatalog

official communications. It is your responsibility to check your IUP email regularly. Visit www.iup.edu/itsupportcenter/howTo.aspx?id=23404 to learn more about setting up this account. For more information regarding University policy on email communication, view the Graduate Catalog: www.iup.edu/gradcatalog

Graduate Student Assembly

The Graduate Student Assembly (GSA) represents the graduate student body's interests at IUP and within the Indiana community. The GSA makes recommendations related University-wide and graduate-specific policies and in areas of concern in the cultural, intellectual, and social life of the part- and full-time graduate student. Visit www.iup.edu/graduatestudies/gsa for more information.

Programs and Degrees

Master's Program

Master's in Science, Applied Industrial Chemistry

Early Registration / 4+1 Master's in Applied and Industrial Chemistry

Course Descriptions

1. Core Courses (12 crs)*

Usually four courses in the areas of Inorganic, Organic, Physical chemistry or Biochemistry. (12 credits)

2. *Science electives (3-6 crs)* The student may select courses from the any science discipline, or they may complete a CHEM 690 research report (5 pages) must be completed at the end of each CHEM 690 course.

3. *Professional Development courses (6-9 crs)* Two or three courses from the College of Business and information Technology. Courses at the 500 level or above. 300 or 400 courses can be taken with the advice and consent of the graduate advisor. Some possible courses: BUS 561, MGMT 613, MGMT 551, MGMT 562, MGMT 650, BLAW 633

4. *Seminar 2 - CHEM 600 (2 crs)* Students are required to present a seminar.

5. *Internship requirement - CHEM 799 (4 crs)** The Graduate coordinator or research advisor may provide guidance in arranging an internship, **that student is ultimately responsible for initiating and securing the internship.** The Internship should be a minimum of 3 months, and may be completed at IUP, if no external internship is available. The acceptability of experience is determined by the internship committee. Before an external internship can be accepted, there must be a signed internship agreement with the host company on file.

Internship committee – The internship committee should consist of an industrial advisor, a faculty advisor, and 2 graduate faculty. A written report is required that describes your internship experience.

Previous work experience – Previous work in the chemical industry may be counted as an internship experience, however, an internship committee must be formed that includes a supervisor at the work site, and a paper must be written about the experience.

** At least 15 credits from the total of required and elective courses must come from 600-level or higher.*

Evaluation of Students

For information regarding School of Graduate Studies and Research policies on grading, view the Graduate Catalog www.iup.edu/gradcatalog

Students take 26 credits of coursework and are evaluated on each course by the instructor. Students also take 4 credits of internship, for which they submit a final internship report. The report is evaluated by an internship committee which includes three faculty members of the chemistry department.

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