Cutting-Edge Programs, Smart People, Cool Research

FIND IT ALL AT ILLINOIS TECH

BE IT ALL CHEMISTRY.

Illinois Tech is a small, private university that educates students to go on to do big things. For graduates of our Department of Chemistry, this has included leading an experimental group at Lawrence Livermore National Laboratory, directing a new initiative on the environment at Massachusetts Institute of Technology, and much more.

What does this mean for you? You’ll experience the same easy access to chemistry professors, allowing for research opportunities, letters of recommendation, and connections in the field. Illinois Tech’s rigorous degree programs are diverse, customized, and area-focused. You will get into the lab with your professors and put chemistry to work, going beyond the traditional discipline as you gain advanced training in high-value and emerging areas such as computational modeling and big data. Innovate, experiment, and gain relevant experience while benefiting from the research capacity of a major league research institution.

Chemistry B.S. Degrees at Illinois Tech

Illinois Tech’s competitive, accredited chemistry program offers you a distinctive education and advanced training in relevant and in-demand chemistry fields. This includes a number of first-of-its-kind B.S. degrees. Receive your bachelor’s degree in a chemistry specialization that is of greatest interest to you.

- B.S. in Bioanalytical Chemistry
- B.S. in Chemistry
- B.S. in Computational Chemistry and Biochemistry
- B.S. in Environmental Chemistry
- B.S. in Forensic Chemistry
- B.S. in Medicinal Chemistry
- Pre-Medicine and Pharmacy Concentrations and Dual Admissions Programs
- Honors Law

Research—Even As an Undergrad!

Chemistry undergraduates at Illinois Tech get the opportunity to work on major research right from the start. We also offer $5,000 Undergraduate Summer Research scholarships to select students. Learn more at http://science.iit.edu/chemistry/hands

“Research on the Edge

Our faculty are pushing the boundaries of what we know in many areas, including:

- **Energy:** Catalysis for solar energy conversion, sustainable chemical synthesis, and functional materials for energy storage and harvesting beyond lithium-ion batteries (Jean-Luc Ayitou, Adam Hock, Ishaque Khan, Braja Mandal)
- **Computational Science and Big Data in Chemistry:** Computational simulation and drug design, data analysis, and computational modeling of bio-organic, biochemical, magnetic, and organometallic systems (David Minh, Andrey Rogachev)
- **Environment and Forensics:** Environmental remediation, nanosensors for detection of bio-terrorism chemicals, environmental pollutants, toxins, DNA and protein molecules (Joy Chong, Richard Guan, Rong Wang)
- **Bioanalysis and Health:** Microscopy-guided analysis and detection of protein and biomolecules, and interaction and discovery of regenerative medicine and nanodiagnostics, and small anti-cancer agents, radiomunotherapy, and antibody drug conjugates (Joy Chong, Rong Wang)

Chemistry Professor Joy Chong conducts interdisciplinary research projects aimed at developing safe, effective, and targeted drugs for cancer and neurodegenerative diseases. Her lab has developed several promising cancer therapeutic and diagnostic agents with successful preclinical profiles that are favorably compared to the existing cancer drugs.
Bioanalytical Chemistry

This signature program is right for you if you are interested in the analysis and detection of biologically active small molecules and biomolecules including protein, DNA, enzyme, and antibody using chemical and biochemical methods. Bioanalytical chemistry is a key discipline in biomedical research and applied to the study of biological processes, detection of human diseases, and pre-clinical and clinical trials of small drugs and biopharmaceutical products. Illinois Tech is the first university in the country to offer a bioanalytical chemistry B.S. program. Our program provides you with an interdisciplinary background in bioanalytical theories and methods, and applications of analytical chemistry for the detection, characterization, and quantification of biological systems. You’ll receive a rigorous education in traditional chemistry areas and the requisite knowledge and technical skills to develop your own competitive career path in the field of bioanalysis, biomedical, clinical, and pharmaceutical science.

Environmental Chemistry

In this discipline you will learn and discover chemical solutions to environmental issues: environmental protection and remediation, energy, green chemistry, environmental analytical chemistry, and more. The only program of its kind in the Chicago area, Illinois Tech’s environmental chemistry B.S. program offers you a rigorous education in traditional chemistry paired with a fundamental interdisciplinary background in chemical applications to environmental problems. You will gain the advanced skills necessary to develop a career in the field of atmospheric and environmental science, environmental analytical chemistry, or environmental health science.

Forensic Chemistry

The forensic chemistry degree prepares you to build a career in forensic investigation, forensic medicine, and forensic drug analysis. Illinois Tech is the only university in the Chicago area to offer a B.S. program in forensic chemistry. Our program will provide you with a strong background in both traditional chemistry areas and chemical applications for analysis, detection, and characterization of forensic and controlled substances. You’ll gain systematic training in chemical science and chemical and instrumental analysis, which will prepare you to develop a career in forensic science, forensic toxicology and DNA analysis, or criminalistics.

Medicinal Chemistry

In this specialized area of chemistry you will learn to apply chemical science to drug design and discovery for the detection and cure of human diseases. The only program of its kind in Illinois, and one of only a handful in the country, Illinois Tech’s medicinal chemistry B.S. program will provide you with a sound interdisciplinary understanding of drug action and drug design. Our program offers you a strong background in traditional chemistry areas and the technical skills required to advance in your career, whether in the biomedical, medical, or pharmaceutical field.

Computational Chemistry and Biochemistry

In this B.S. program you will experience computational modeling and big data in chemistry. You’ll study chemical and molecular modeling and simulation, computational chemical biology, computational drug design, and computational methods for data analytics. The program is designed to prepare you to advance in the rapidly growing fields of computational and data science, offering you a strong background in traditional chemistry areas combined with relevant and advanced skills in experimental and computational science. Illinois Tech is the only university to offer a comprehensive computer-related program with course requirements covering chemical and biochemical science, computational techniques, and data science.
Learn to Innovate in IPROs

In Illinois Tech’s signature Interprofessional Projects (IPRO) Program, you’ll work with students from various majors to solve real-world problems. Recent chemistry-oriented IPROs include:

- Terraforming urban soils and use of appropriate food process technologies
- Simulating and visualizing molecules moving through biological nanopore sensors
- Developing a new strategy to search for smuggled nuclear material
- Fabrication and commercialization of high-power Li-ion batteries

Food Science at Illinois Tech

The Department of Food Science and Nutrition leverages the power of collaborative research between Illinois Tech and the U.S. Food and Drug Administration, which allows our students to benefit immensely from focused interaction with FDA scientists.

- Bachelor of Science in Chemistry and M.A.S. in Food Safety and Technology

STAND OUT.

Our graduates are far from ordinary. But we expect them to be extraordinary.

Susan Solomon (Chemistry ’77)—Co-chair of the Intergovernmental Panel on Climate Change, which received the 2007 Nobel Peace Prize

Vincent Rotello (Chemistry ’85)—Professor at the University of Massachusetts Amherst, where he researches sensors, materials, and drug delivery

Giang Vo (Chemistry ’05)—Senior research investigator at DuPont, where he is conducting research used in displays, lighting, and smart materials applications

In my Introduction to the Profession class, we were assigned to interview a few professors from the chemistry department and to learn more about their research. As a result of one such interview, I became interested in one of my professor’s work and was invited to take an introductory research class in his lab over the summer. Gaining laboratory experience really broadened my idea of chemistry as a career, and helped me see what I was getting myself into after graduation.

— Grace Wischmeyer (Chemistry/Biology, Environmental Engineering Minor 2nd Year), Franklin Park, Illinois Camras Scholar

2’Fer Advantage

Illinois Tech’s special degree programs allow you to receive both your bachelor’s and master’s degrees in as few as five years.

- Bachelor of Science in Chemistry and Master of Science in Biology for the Health Professions
- Bachelor of Science in Chemistry and Master of Science in Chemistry
- Bachelor of Science in Chemistry and Master of Science in Chemical Engineering
- Bachelor of Science in Chemistry and Master of Science in Sustainability Management

“...The research-oriented education that I received from Illinois Tech enabled me to make an immediate impact in graduate school and to stand out from my peers.”

— Ryan McClure (Chemistry ’11)
Graduate of the Northwestern University Ph.D. program, senior scientist at AbbVie

EXPERIENCE IT

SEE WHAT HAWK LIFE IS ALL ABOUT!

Throughout the year we host a number of opportunities for you and your family to come check out everything you’d ever want to know about us!

Schedule a campus visit today at visit.iit.edu.

Or send us an email at admissions@iit.edu.