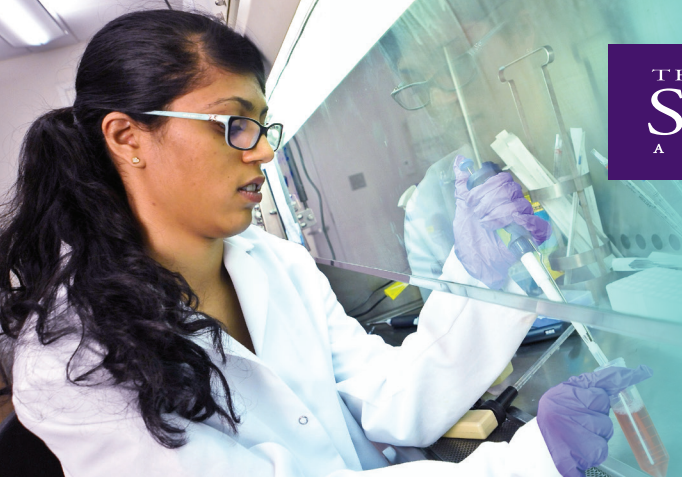


THE UNIVERSITY OF SCRANTON
A JESUIT UNIVERSITY

A Catholic & Jesuit University

GRADUATE Chemistry Programs

COLLEGE OF ARTS & SCIENCES

WHY SCRANTON?

Excellence in academic and professional competencies. Jesuit values. Successful outcomes. You'll find all of this – and more – when you choose The University of Scranton for your Master of Science degree in chemistry. Our dedicated faculty will work alongside you as you pursue a higher level of education through our graduate programs in chemistry.

JESUIT VALUES

- *Fosters academic, professional and personal development*
- *Contribution of transformative scientific work in the chemical sciences*

OUTCOMES

BIOCHEMISTRY:

- Graduates have found employment with Sanofi Pasteur, Merck and with the federal government, enrolled in Ph.D. programs at Thomas Jefferson University, the University of Florida, the University of Arkansas and the University of Notre Dame, and have been admitted into medical, dental, pharmacy and podiatry programs.

CHEMISTRY:

- Graduates have found employment with Sanofi Pasteur and have enrolled in Ph.D. programs at Yale University and Princeton University.

CLINICAL CHEMISTRY:

- Graduates have found employment with Sanofi Pasteur and have been admitted into medical, dental, pharmacy, podiatry or optometry programs.

GETTING RECOGNIZED

RESULTS, REPUTATION & ACCREDITATION

LABORATORY FACILITIES

- Exceptionally well-equipped laboratory with modern instrumentation, including a scanning electron microscope
- IR, UV, and fluorescence spectrometers
- Gas and liquid chromatographs
- A variety of lasers
- A gas chromatograph-mass spectrometer
- A Varian Gemini 300MHz NMR
- Atomic absorption, inductively coupled plasma and matrix-assisted laser desorption ionization mass spectrometry instrumentation

The University's Chemistry Department is well regarded nationally, consistently ranking as one of the top producers of master's degrees in the United States.

AT A GLANCE

- Offers three distinct Master's degree programs: biochemistry, chemistry and clinical chemistry
- Students exposed to faculty with a wide range of experience and expertise
- Embraces the traditions of Ignatian identity
- Preparation for a successful career, whether it be in industry, secondary education or research

REAL WORLD RESULTS

FILLING A GROWING NEED

Data from the ACS Committee on Professional Training Annual Report indicate that the University was tied for 18th in the nation in producing master's graduates (17) in 2013-2014 as noted in the 2014 edition of the ACS Directory of Graduate Research. We were 6th among all terminal programs in the number of master's graduates. We are the leader among Jesuit universities in the United States and have granted more master's degrees in the chemical sciences during this time period.

96% of recent graduates are currently employed or are enrolled in doctoral programs.

ONE-TO-ONE LEARNING

Faculty Engagement

PERSONAL ATTENTION

- Learn from an incomparable faculty comprised of skillful educators who pride themselves in their teaching, research and service.
- Gain practical knowledge from faculty that bring significant work experiences to the class room experience.
- Work alongside a faculty mentor who will assist with personal academic planning throughout the program.

LOYOLA SCIENCE CENTER

The Loyola Science Center is designed to serve as a center for collaborative learning for all members of the campus and community. It is our goal to make science accessible and welcome to all, and to highlight science as a human endeavor.

The facility incorporates today's most innovative science teaching techniques into a dynamic, modern design that includes inviting spaces for student/faculty collaboration, visible glass-walled laboratories and the efficiencies of using shared instrumentation. This center will encourage collaborative learning and promote effective intellectual collisions between and among faculty, students, and members of the community.

Designed for silver Leadership in Energy and Environmental Design (LEED) certification, the Loyola Science Center includes a nearly 150,000-square foot, four story structure that is designed to serve as the home for all natural sciences research and instruction. The Loyola Science Center promotes innovative graduate teaching and research.

CURRICULUM *Programs of Study*

Graduate Chemistry **Programs**

BIOCHEMISTRY *- 30 credits for degree*

CHEM 531 – Mechanistic Organic Chemistry
CHEM 550 – Biochemical Structure and Function
CHEM 551 – Biocatalysis and Metabolism
CHEM 563 – Advanced Thermodynamics and Equilibrium
CHEM 570 – Advanced Analytical Chemistry
CHEM 571 – Analytical Methods*

**May be waived for those individuals who have previously taken an equivalent instrumental-analysis laboratory course. With permission, CHEM 560-CHEM 561 may be substituted for CHEM 563 for those with a less complete background.*

Elective Courses: Students take elective credits to get to the thirty credit level required for the degree. Electives may be taken from any of the following categories:

Thesis: Students in the Thesis track will take one credit of CHEM 509 – Introduction to Research and two to eight credits of thesis work CHEM 599. The number of thesis credits will be determined in consultation with the student's mentor, depending on the scope of the thesis project. Normally, eight thesis credits are devoted to the project.

Other Chemistry courses: Students may select other graduate courses offered by the Chemistry department, in consultation with their mentor, to complete their electives.

CHEMISTRY *- 30 credits for degree*

Required Core Courses:
CHEM 530 – Structural Organic Chemistry
CHEM 531 – Mechanistic Organic Chemistry
CHEM 540 – Advanced Inorganic Chemistry
CHEM 562 – Advanced Quantum Chemistry
CHEM 563 – Advanced Thermodynamics and Equilibrium
CHEM 570 – Advanced Analytical Chemistry
CHEM 571 – Analytical Methods*

**May be waived for those individuals who have previously taken an equivalent instrumental analysis laboratory course.*

Elective Courses: Students take elective credits to get to the thirty credit level required for the degree. Electives may be taken from any of the following categories:

Thesis: Students in the Thesis track will take one credit of CHEM 509 – Introduction to Research and two to eight credits of thesis work CHEM 599. The number of thesis credits will be determined in consultation with the student's mentor, depending on the scope of the thesis project. Normally, eight thesis credits are devoted to the project.

Other Chemistry courses: Students may select other graduate courses offered by the Chemistry department, in consultation with their mentor, to complete their electives.

CLINICAL CHEMISTRY *- 36 credits for degree*

Required Core Courses:
CHEM 531 – Mechanistic Organic Chemistry
CHEM 550 – Biochemical Structure and Function
CHEM 551 – Biocatalysis and Metabolism
CHEM 554 – Biochemistry of Disease
CHEM 555 – Chemical Toxicology
CHEM 556 – Clinical Quality Control
CHEM 565 – Instrumental Electronics
CHEM 570 – Advanced Analytical Chemistry
CHEM 571 – Analytical Methods*

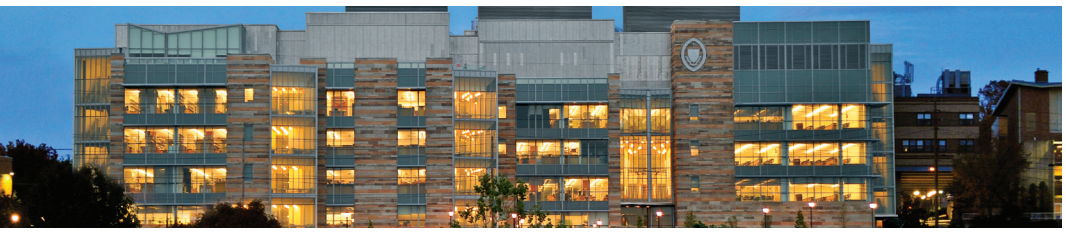
**May be waived for those individuals who have previously taken an equivalent instrumental analysis laboratory course.*

Elective Courses: Students take nine elective credits. Electives may be taken from any of the following categories:

Thesis: Students in the Thesis track will take one credit of CHEM 509 – Introduction to Research and two to eight credits of thesis work CHEM 599. The number of thesis credits will be determined in consultation with the student's mentor, depending on the scope of the thesis project. Normally, six thesis credits are devoted to the project.

Students in the Administration track should take HAD 500 – Health Care Organization and Administration, plus two additional three-credit courses in Health Administration (HAD) chosen after consultation with their mentor and the Director of the HAD program.

Other Chemistry courses: Students may select other graduate courses offered by the Chemistry department, in consultation with their mentor, to complete their electives.



WHAT NEXT? *HOW TO PROCEED FROM HERE*

Applicants who have questions about our nondiscrimination policy, or have concerns about discrimination on the basis of sex should contact: Title IX Coordinator, c/o • The Office of Equity & Diversity • Institute of Molecular Biology & Medicine, Rm 311 • TitleIX@scranton.edu • 570.941.6645

ADMISSION

Admission Criteria for Acceptance

Admission to the Chemistry programs is based on a combination of indicators including previous academic performance with the completion of a bachelor's degree and three professional letters of recommendation.

English Proficiency can be submitted as one of the following:

- Minimum TOEFL 80ibt (internet-based test)
- Minimum IELTS overall band score of 6.5
- Pearson Test of English (PTE) Academic score of 53
- Successful completion at a participating English language center in the USA
- Duolingo (score of at least 105)

APPLY NOW

We welcome applications on a rolling basis for all available terms. To apply to a graduate Chemistry program and for additional admission requirements, please visit: **scranton.edu/gradapply**

For additional information on international student support and services, please visit: **Scranton.edu/international**

GRADUATE ASSISTANTSHIPS

Graduate students have the opportunity to gain employment as teaching assistants, research assistants or graduate assistants. The assistantship enables the student to pursue a graduate education, strengthen the quality of their educational experience and helps the University develop the quality of its graduate programs. The student will be awarded a tuition scholarship as well as a stipend. *More at:* **scranton.edu/ga**

CONTACT THE PROGRAM DIRECTOR

You are encouraged to contact the Program Director, Dr. Christopher Baumann, for additional information on the academic components of the graduate Chemistry programs. To contact Dr. Baumann, please email **christopher.baumann@scranton.edu** or call **570.941.6389**.

CONTACT

Stacey Urgento '98 G'01
Assistant Director of Graduate Admissions

+1 **570.941.5921**

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gradadmissions@scranton.edu

LOCATION

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Office of Graduate & International Admissions,
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PA, U.S.A, 18510-4699

scranton.edu/international