



Master of Chemical Sciences

Preparation for professional success

Chemistry professionals are at the forefront of the human quest to solve ever-evolving challenges in agriculture, healthcare and the environment. As new discoveries are made, so are new industries — and new opportunities. Whether you're currently a chemistry professional or seeking to enter the field, Penn's rigorous Master of Chemical Sciences builds on your level of expertise to prepare you to take advantage of the myriad career possibilities available in the chemical sciences. With a faculty of leading academic researchers and experienced industry consultants, we provide the academic and professional opportunities you need to achieve your unique goals.

The Penn Master of Chemical Sciences connects you with the resources of an Ivy League institution and provides you with theoretical and technical expertise in biological, inorganic, organic, physical and materials chemistry. In our various seminar series, you will also regularly hear from chemistry professionals who work in a variety of research and applied settings, allowing you to consider new paths and how best to take advantage of the program itself to prepare for your ideal career.

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Courses and Curriculum

The Master of Chemical Sciences degree is designed to give you a well-rounded, mechanistic foundation in a blend of chemistry topics. To that end, the curriculum is structured with a combination of core concentration courses and electives, which allow you to focus on topics best suited to your interests and goals.

The Master of Chemical Sciences curriculum includes:

- **Pro-Seminar:** This course reviews fundamental concepts regarding research design, the scientific method and professional scientific communication, and will familiarize you with techniques for searching scientific databases and the basis of ethical conduct in science.
- **Core concentration courses:** These courses will allow you to develop subfield expertise and signify mastery in your area of interest to potential employers. The five chemical sciences concentrations include:
 - Biological
 - Inorganic
 - Organic
 - Physical
 - Materials
- **Optional independent studies:** This optional course is offered each fall and spring semester, giving you an opportunity to participate in one of the research projects being conducted in one of our chemistry laboratories. During the study, you will learn analytical skills relevant to the capstone project and your career goals.
- **Capstone project:** The capstone project is a distinguishing feature of the Master of Chemical Sciences program, blending academic and professional experiences and serving as the culmination of your work in the program. You develop a project drawing from your learning in and outside of the classroom to demonstrate your mastery of an area in the chemical sciences.

Admissions

The typical student in the Master of Chemical Sciences program will hold an undergraduate degree in chemistry, engineering, mathematics or the equivalent. An adequate undergraduate background will vary, depending on area of concentration and will include some combination of coursework in chemistry, biology, mathematics, physics and/or engineering.

At a minimum, applicants will need to have completed two terms of calculus, two terms of introductory chemistry and the equivalent of two terms of organic chemistry with associated labs, and two terms of physics. Given these requirements, a degree in chemistry, physics or biology would be ideal preparation.

Financing your Education

It is our goal at Penn to make education accessible to talented students from the widest possible range of backgrounds. Master of Chemical Sciences students are eligible to apply for financial aid, including a variety of student loans, some of which are subsidized by the federal government. Penn's Student Financial Services (SFS) office is available to help prospective and current students navigate the process. If you intend to complete the Master of Chemical Sciences degree as a working professional, you may be able to take advantage of tuition benefits offered by your employer. If you are a full-time Penn employee, ask an advisor more about Penn's tuition benefits package.

Contact Information

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