



## The School of Science

### BACHELOR OF SCIENCE IN CHEMISTRY with Concentrations in Biochemistry, Advanced Chemistry, and Chemical Physics

A broad spectrum of careers and opportunities spanning the fields of research, education, medicine, pharmaceuticals, and law provide the chemistry major with unique opportunities, high salaries, and upward career mobility. Monmouth University's Department of Chemistry, Medical Technology, and Physics offers our students an appropriate breadth of degree options in chemistry to match their academic interests and prepare them for a successful future.

Monmouth's Bachelor of Science in Chemistry degree program consists of a core program, which permits individualized scheduling leading to a double major in many disciplines, including biology, business, criminal justice, health studies, and medical laboratory science. Students who complete a double major in chemistry and education and a minor in physics are eligible for certification as a physical science teacher within the normal 128 credits required for graduation. This teaching certification has the highest demand in New Jersey and the surrounding region.

The advanced chemistry concentration is approved by the American Chemical Society; all graduates who complete this concentration are ACS certified and thus earn a nationally recognized credential for outstanding professional and fundamental training in all areas of chemistry.

Biochemistry appeals to students interested in both chemistry and biology. Our biochemistry concentration allows students to explore the relationship between these fields and deepen their knowledge, with sufficient elective freedom to choose additional courses leading to ACS certification. This degree is especially appropriate for students interested in medical school, those seeking careers in the pharmaceutical industry, or those who want to pursue advanced degrees in biochemistry.

In the 21<sup>st</sup> century, new research and development opportunities have arisen in the fields of nanoscience, nanotechnology, and materials science. Our concentration in chemical physics is an excellent opportunity to prepare to work in this area as well as for graduate studies in computational chemistry, physical chemistry and chemical physics. Students complete a sequence of chemistry, physics, and mathematics courses designed to develop an integrated understanding of the physical sciences and develop models of understanding the new paradigms arising in science and engineering.

#### The Monmouth Advantage

The success of Monmouth's chemistry majors is directly related to the personal attention students receive from the faculty. Monmouth offers the resources of a larger university combined with the specialized attention afforded by a small student-to-teacher ratio. All chemistry majors enjoy full access to state-of-the-art instrumentation in the Thomas A. Edison Science Hall. Students have the opportunity to become familiar with modern UV-VIS, IR, NMR, and AA spectrometers; HPLC, GC, and GC-MS analyzers; electrochemistry workstations; and more. All of the teaching laboratories have computers available for automated data acquisition. Students use all instruments under the guidance of experts.

The full-time chemistry faculty members all hold doctoral degrees and have a broad range of interests including analytical, computational, organic, inorganic, and physical chemistry as well as chemical education, biophysical chemistry, and nanoscience.

Research opportunities with faculty members are available and strongly encouraged for interested students. A required experiential learning component provides an opportunity for chemistry majors to take their education beyond the classroom during their undergraduate years, which is invaluable preparation for work in the pharmaceutical industry as well as medical and graduate schools.

#### Career Preparation

Our program is unique in that it is laboratory-intensive, with a focus on providing students with the skills needed to succeed in a professional work environment. Four of our full-time faculty have extensive local, national, and international industrial experience and serve as career advisors. Completion of any one of the chemistry degree programs is excellent preparation for careers in chemical business, environmental protection, forensics, government, industrial hygiene, information science, patent law, science writing, education, toxicology, and many other areas.

Graduates of our program have found employment at a variety of companies, including Johnson & Johnson, L'Oréal, Merck, Schering-Plough, Sanofi-Aventis, Unilever, and Westward Pharmaceutical, as well as in various public school systems.

Alumni have also been accepted for graduate or medical studies to Georgetown, Yale, Rutgers, Princeton, Vanderbilt, Drexel, Columbia, the University of Delaware, the University of Illinois, the University of North Texas, Kansas City University of Medicine and Biosciences, and North Carolina State University, among others.

### valuable online resources

- Apply Online
- Curriculum Charts
- Department Faculty Members
- [www.monmouth.edu/chemistry](http://www.monmouth.edu/chemistry)

**For complete information on all undergraduate programs within the School of Science, please visit [www.monmouth.edu/science](http://www.monmouth.edu/science).**