

# CHEMISTRY AND BIOCHEMISTRY

## Undergraduate Program Information

A degree in chemistry or biochemistry enables a student to pursue a wide variety of careers in: research, production, sales, management and teaching. These degrees are also an excellent preparation for professional studies in medicine, dentistry, forensics, veterinary science, optometry, pharmacology, pharmacy and law.

The NMSU **Bachelor of Science Chemistry major** is certified by the American Chemical Society (ACS). Graduates who complete the program are also eligible for immediate election to membership in the ACS.

The NMSU **Bachelor of Science Biochemistry major** is accredited by the American Society of Biochemistry and Molecular Biology (ASBMB). BS Biochemistry majors are eligible to obtain degree certification through examination.

The department offers **concentrations in Secondary Education** for the Bachelor of Arts in Chemistry major and the Bachelor of Science in Chemistry major. These concentrations follow the same Chemistry degree plans but also provide the Education courses that lead to a certification as a secondary education teacher in science.

The department also offers a **Pre-Med concentration** for the Bachelor of Arts in Chemistry major. The concentration in Pre-Medical Studies provides foundational knowledge to students who are preparing to take the MCAT exam. Graduates will successfully complete medical school pre-requisite coursework and obtain an interdisciplinary understanding of healthcare that includes scientific, humanistic, and social science perspectives.

All departmental and nondepartmental requirements may not be taken S/U, unless the course only offers S/U grading option, and must earn a C- or better final grade.

This department does not have a foreign language requirement for any of its degrees.

## Graduate Program Information

The Department of Chemistry and Biochemistry offers programs leading to the **MS and Ph.D. degrees in Chemistry** in the areas of physical, organic, inorganic, and analytical chemistry, and we offer a **concentration in Biochemistry**. Admission to these programs without deficiency is based on an undergraduate program essentially equivalent to that pursued by a chemistry or biochemistry major at this university. All applying students must submit undergraduate transcripts, a personal statement and CV, and arrange for 3 letters of recommendation. All foreign students from undergraduate programs taught in a language other than English must additionally submit TOEFL or IELTS scores and demonstrate adequate English speaking and writing skills. GRE scores are not required to apply.

The core course work required of students entering the Chemistry MS or PhD programs with no previous graduate study in chemistry or biochemistry consists of courses exploring the concepts of Energy, Structure, Dynamics, and Measurements as applied to all disciplines of chemistry. Students enrolled in the Biochemistry concentration take core course work in Biochemistry. All graduate students also take short

courses in Safety, Research Ethics, and Professional Development. Successful completion of a Qualifying Exam taken after the first year of coursework will determine whether a student is qualified to pursue continued study at the M.S. or Ph.D. level. Ph.D. candidates must take at least 6 additional credits of specialized coursework chosen in consultation with the thesis committee while M.S. candidates must take at least 3 additional credits. Ph.D. candidates must successfully complete a Comprehensive Exam in order to be eligible to write and defend a Ph.D. thesis. All students are expected to participate in discussion groups and department colloquia.

Students enrolled in the Biochemistry concentration take core course work in Biochemistry

Since research is central in both the M.S. and Ph.D. programs, the early selection of a research advisor is encouraged. Students may choose to rotate through up to 3 research labs during their first semester before selecting a research advisor. Financial support is provided to all graduate students during their first year through teaching assistantships. Continued support may be provided through a research or teaching assistantship, depending upon individual laboratory funding. All support is contingent upon satisfactory academic and research performance. In addition, numerous traineeships and fellowships are available to qualified students. Inquiries regarding these opportunities should be directed to the graduate program coordinator.