BIOCHEMISTRY M.S.

The Department of Chemistry & Biochemistry (https://www.sju.edu/departments/chemistry/) offers graduate programs leading to the Master of Science (M.S. thesis or non-thesis) in Biochemistry (https://www.sju.edu/degree-programs/biochemistry-ms/) (specialties: bioanalytical chemistry and peptide, protein, lipid and nucleic acid chemistry). These programs are designed to prepare students for careers in academic, industrial, and governmental settings. Individualized programs of study, which take advantage of modern instrumentation (https://www.sju.edu/departments/chemistry/research/), provide a solid foundation for independent research. Expert instructors (https://www.sju.edu/departments/chemistry/graduate-faculty/) bring biology and chemistry disciplines together and research opportunities link those lessons to the real world. You'll take classes on our University City campus and have the option to pursue research-based (thesis) or classroom-based (non-thesis) degrees.

Students entering the graduate program in biochemistry may have any undergraduate degree that satisfies all the prerequisites for these programs. However, in some instances the graduate program director will need to assign appropriate remedial courses to ensure that students are properly prepared for the graduate courses in their particular program. In order to help the program director evaluate an entering student's background, each student takes a series of entrance examinations in specific areas of chemistry.

Learning Goals and Outcomes

Goal 1: Achieve an in-depth understanding of important concepts pertaining to all the major areas of chemistry appropriate to the research problem being addressed and be able to apply the knowledge gained.

Goal 2: Be exposed to the laboratory procedures and chemical instrumentation necessary for the solution of the research problem being addressed and be able to use them effectively for that purpose.

Goal 3: Become aware of critical safety issues and environmental regulations.

Goal 4: Be able to use computers effectively for both scientific and nonscientific tasks.

Goal 5: Be able to explore the scientific literature using a variety of resources and communicate that information effectively.

Goal 6: Attain a level of problem-solving and critical-thinking skills appropriate to the graduate degree being sought and be able to learn independently.

Requirements

Thesis:

Code	Title	Hours
CHM 887	Graduate Colloquium	1
CHM 786	Research Ethics	1
CHM 802	Research Seminar Students must participate in CHM-802 every term after their first semester until they defend their thesis work. Only 2 credits of this repeatable 1 credit course can be counted towards their degree credit requirements.	2
MAT 704	Statistics for Research	3
CHM 897	Scientific Proposals	3
CHM 728	Advanced Biochemistry	3
BIO 861	Cell and Molecular Biology	3
Electives: CHM or BIO courses in the 600-800 levels Elective courses must be approved by Advisor, Advisory Committee, or Program Director.		3
CHM 878	Introduction to Research	1
CHM 899	Graduate Research (Minimum) 10 credits minimum, typically many more will be required to complete a Master's-level research project	10
Total Hours		**30**

In addition to the above coursework, M.S. thesis students have a number of progression milestones which include:

1. Selection of Research Advisor
2. Selection of Research Committee
3. Preparing a committee approved Research Prospectus
4. Presentation of your research efforts at an external venue at least once
5. Preparing a committee approved Thesis on your original research
6. Successful Defense of your thesis work

Non Thesis:

Code	Title	Hours
CHM 887	Graduate Colloquium	1
CHM 786	Research Ethics	1
CHM 802	Research Seminar Students must participate in CHM 802 every term after their first semester until they complete their didactic requirements. Only 2 credits of this repeatable 1 credit course can be counted towards their degree credit requirements.	2
MAT 704	Statistics for Research	3
CHM 728	Advanced Biochemistry	3
BIO 861	Cell and Molecular Biology	3
Electives: CHM or BIO courses in the 600-800 levels Elective courses must be approved by Program Director. Up to 3 credits of research may be applied towards this requirement.		18
Total Hours		**31**