

## Department of Chemistry and Biochemistry Master of Science Curriculum Map

Course	C1	C2	C3	C4	C5	SP1	SP2	SP3	SP4
505A	I/D	I/D	D/M	I/D	I	I	I	I	I/D
505B	D/M	I/D	D/M	I/D	I/D	I/D/M	I/D	D	M
Core 1	I/D	D/M	I/D	D	D/M	I/D	I		
Core 2	I/D	D/M	I/D	D	D/M	I/D	I		
Core 3	I/D	D/M	I/D	D	D/M	I/D	I		
598	D/M	D/M		D/M	M	M	D/M	M	M
599	D/M	D/M		D/M	D/M	I/D/M	D/M	D/M	I/D/M
Electives		D	D/M	D	I/D		I/D	I/D	

I – Introduced

D – Developed

M - Mastered

California State University Fullerton  
Department of Chemistry and Biochemistry

### STUDENT LEARNING OUTCOMES FOR MASTER OF SCIENCE DEGREE IN CHEMISTRY

The following goals and learning outcomes have been established for students pursuing the M.S. degree in Chemistry

The aim of the Master of Science (MS) Program in the Department of Chemistry and Biochemistry is to provide a dynamic learning environment in which graduate students can:

- Develop the skills, experiences and mastery required to enter and be succeed in diverse careers in the chemical or biochemical sciences or academic and professional programs;
- Investigate and solve a problem with good scholarship and modern research approaches that lead to new knowledge in chemistry and biochemistry;
- Become ethical professionals able to (i) perform scientific and computational literature searches, and (ii) understand and communicate the role of chemistry, biochemistry, and research in their professional practice.

For most updated information, please contact the Department.

The following goals and learning outcomes have been established for students pursuing a M.S. degree in chemistry:

*Concepts*

1. (C1) Demonstrate in-depth knowledge and an understanding of scientific questions in a primary area of expertise in the chemical and biochemical sciences and place the thesis research in the context of the current state of knowledge of the field.
2. (C2) Appropriately employ models, theories, mathematical relationships and symbolic notations that are used to represent and test knowledge in the chemical and biochemical sciences.
3. (C3) Demonstrate an awareness of the diversity and interdisciplinary nature of the chemical and biochemical sciences and a competent understanding of the fundamental principles in related disciplinary fields through participation in coursework, seminars and group meetings.
4. (C4) Employ the principles of safe practices and ethical use of scientific knowledge, materials and procedures.
5. (C5) Demonstrate mastery of fundamental and advanced instrumentation and techniques used in his/her disciplinary field of chemistry and biochemistry.

*Skills and Processes*

1. (SP1) Analyze, interpret, and retrieve data from the primary and review literature, to develop critical thinking and problem solving skills for raising and addressing scientific question(s).
  2. (SP2) Demonstrate the ability to generate and collect data and information through designing and safely testing original hypothesis using contemporary methods and techniques.
  3. (SP3) Work independently and cooperatively on an original research project to collect, interpret, analyze, organize, and present high quality data for an original thesis.
- (SP4) Effectively communicate ideas, concepts, results and conclusions from the original research project in a written thesis, oral defense and poster presentations.

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