

# Chemistry

## Major

## Minor

## Track in:

- TRADITIONAL CHEMISTRY

## Concentrations in:

- PROFESSIONAL CHEMISTRY
- BIOCHEMISTRY

### Professors:

Larivee (Chair), Senese

### Associate Professors:

Biser, Simon

### Assistant Professors:

Crawford, Norris

- All chemistry majors must take the core courses and select either the Traditional Track, Professional Concentration, Biochemistry Concentration or Teaching Certification Option to fulfill requirements for the major. The Traditional Track is recommended for students wishing to double major.
- Chemistry is often selected as a major by students planning to enter health professions careers. The Biochemistry Concentration is a suitable choice. (See the section on Health Professions Preparation of this catalog.)
- The Professional Concentration is a strong program for graduate school preparation.

	MAJOR					MINOR
	Trad. Track	Sec. Ed. Teach. Track	Profess. Con.	Biochem. Con.		
Hours Required in Chemistry:	39	39	52	41	21	
Hours Required in Other Departments:	20	53	24	31	0	
<b>Total Hours Required:</b>	<b>59</b>	<b>92</b>	<b>76</b>	<b>72</b>	<b>21</b>	

## Summary of Requirements for Major/Minor in Chemistry

Major	Minor
<p><b>1. Core Introductory Level Courses: (8 hours)</b>            CHEM 201 General Chemistry I (<i>GEP Group C</i>)            CHEM 202 General Chemistry II</p> <p><b>2. Core Advanced Courses: (23 hours)</b>            CHEM 311 Organic Chemistry I            CHEM 312 Organic Chemistry Laboratory I            CHEM 321 Organic Chemistry II            CHEM 322 Organic Chemistry Laboratory II            CHEM 304 Computational Tech. in Chem. (<i>Tech. Fluency</i>)            CHEM 305 Research Methods in Chemistry            CHEM 320 Quantitative Anal. Chem.            CHEM 441 Physical Chemistry Lecture I            CHEM 445 Physical Chemistry Lab I            CHEM 491 Seminar in Chemistry            CHEM 492 Capstone Experience</p> <p><b>3. Required Courses in Other Departments:</b>  <b>Mathematics: (8 hours)</b>            MATH 236 Calculus I (<i>Core Skill 3</i>)            MATH 237 Calculus II  <b>Physics: (8 hours)</b>            PHYS 215, 216 General Physics I, II (<i>215: GEP Group C</i>)            or PHYS 261, 262 Principles of Physics I, II (<i>261: GEP Group C</i>)</p> <p><b>4. Choice of Specialization: (12-61.5 hours)</b>            Majors must choose the Traditional Track, Professional Concentration, Biochemistry Concentration or Teaching Certification Option. Requirements listed below.</p> <p><b>5. All majors must earn a C or better in CHEM 201, 202, 311, 320, 321.</b></p>	<p><b>1. Core Introductory Level Courses: (8 hours)</b>            CHEM 201 General Chemistry I (<i>GEP Group C</i>)            CHEM 202 General Chemistry II</p> <p><b>2. Core Advanced Courses: (17 hours)</b>            CHEM 311 Organic Chemistry I            CHEM 312 Organic Chemistry Laboratory I  <i>and 9 additional hours in Chemistry, 300 level or above, no more than 3 credit hours from CHEM 491 Seminar in Chemistry, CHEM 492 Capstone Experience, CHEM 493 Advanced Chemical Research, CHEM 495 Internship in Chemistry and CHEM 499 Special Problems in Chemistry</i></p>

## Requirements for the Traditional Track for Chemistry Majors

### 1. Core Courses: (47 hours)

Required of all Chemistry majors, listed above

### 2. Advanced Courses: (8 hours)

CHEM 421 Instrumental Analysis  
 CHEM 442 Physical Chemistry II  
 CHEM 446 Physical Chemistry Lab II

### 3. Required Courses in Mathematics: (4 hours)

MATH 238 Calculus III

### 4. All majors in this track must earn a C or better in CHEM 441.

## Requirements for the Secondary Education Chemistry Track

### 1. Core Courses: (47 hours)

Required of all Chemistry majors, listed above.

### 2. Advanced Courses: (8 hours)

CHEM 421 Instrumental Analysis  
 CHEM 455 Biochemistry I  
 CHEM 394 Peer Mentoring in Chemistry

### 3. Required Courses in Other Departments

(4 hours)

BIOL 149 General Biology (GEP Group C)

### 4. Required Courses in Education (33 hours)

- Must complete the Secondary Teacher Education Major.
- See the Secondary Teacher Education Program Coordinator for details.
- Note: This track may not meet the requirement for graduate studies in chemistry.

## Requirements for the Professional Concentration for Chemistry Majors

### 1. Core Courses: (47 hours)

Required of all Chemistry majors, listed above.

### 2. Advanced Courses: (16 hours)

CHEM 411 Advanced Inorganic Chemistry  
 CHEM 421 Instrumental Analysis  
 CHEM 442 Physical Chemistry II  
 CHEM 446 Physical Chemistry Lab II  
 CHEM 455 Biochemistry I  
 CHEM 493 Advanced Chemistry Research (1 hour)

### 4. Required Course in Other Departments:

(8 hours)

BIOL 149 General Biology  
 MATH 238 Calculus III

### 5. All majors in this concentration must earn a C or better in CHEM 441.

### 3. Required Elective Courses (5-6 hours)

A minimum of 5 hours in at least two courses:

CHEM 420 Environmental Chemical Analysis  
 CHEM 438 Advanced Organic Chemistry  
 CHEM 456 Biochemistry Lab  
 CHEM 457 Biochemistry II  
 CHEM 460 Environmental Chemistry  
 CHEM 490 Selected Topics in Chemistry  
 CHEM 493 Advanced Chemistry Research (2 additional hours)

## Requirements for the Biochemistry Concentration for Chemistry Majors

### 1. Core Courses: (47 hours)

Required of all Chemistry majors, listed above.

### 2. Advanced Courses: (9 hours)

CHEM 455 Biochemistry I  
 CHEM 456 Biochemistry Lab  
 CHEM 457 Biochemistry II

### 4. Required Electives: (1-4 hours)

Select from among:

CHEM 411 Advanced Inorganic Chemistry  
 CHEM 420 Environmental Chemical Analysis  
 CHEM 421 Instrumental Analysis  
 CHEM 442 Physical Chemistry II  
 CHEM 493 Advanced Chemistry Research (1-3 hours)  
 MATH 238 Calculus III

### 3. Required Courses in Biology: (15 hours)

BIOL 149 General Biology I (GEP Group C)  
 BIOL 304 Microbiology  
 BIOL 350 Genetics  
 BIOL 435 Molecular Biology

### 5. All majors in this concentration must earn a C or better in CHEM 455.