General Areas of Service: Chemists study substances at the atomic and molecular levels and the ways in which the substances interact with each other. They may apply their study to finding solutions to environmental problems, determining the causes of diseases and providing preventive vaccines and cures, and discovering or synthesizing new substances and materials that have useful properties and characteristics. The most common occupations of chemists include basic or applied research in industrial, academic, or government laboratory settings, development and testing of new products for chemical and pharmaceutical industries, analysis of clinical and industrial samples, teaching at the secondary or college level, and various sales, support, and technical writing positions.

Professional Training: A bachelor’s degree in chemistry or biochemistry is usually the minimum education necessary to work as a chemist. However, many research jobs require a masters or Ph.D. degree. In government or industry, beginning chemists with a bachelor’s degree work in technical sales or services, quality control, or assist senior chemists in research and development laboratories.

Job Outlook: According to the Bureau of Labor Statistics (BLS), “…employment of chemists and materials scientists is projected to grow 7 percent from 2016 to 2026, about as fast as the average for all occupations… Chemists and material scientists with advanced degrees, particularly those with a Ph.D. and work experience, are expected to have better opportunities.” (See www.bls.gov)

Earnings: In their May 2018 salary survey, the Bureau of Labor Statistics reports the median annual wage for chemists as $76,890, with the lowest 10 percent earning less than $43,920 and the highest 10 percent earning more than $133,180. They also report the median annual wage for materials scientists as $99,800, with the lowest 10 percent earning less than $52,560 and the highest 10 percent earning $159,970. Expected salaries are higher for chemists and materials scientists holding advanced degrees. (See www.bls.gov)

Note: Senior students are required to take the Major Field Achievement Test (MFAT) examination in chemistry.

Those who are seeking teaching certification must see an adviser in the School of Education and Psychology.
The chart below details one suggested path a student may take to complete a bachelor's degree in Chemistry. Cognates are listed in italics.

**Fall Courses** | **Hours** | **Winter Courses** | **Hours** | **Spring Courses** | **Hours**
---|---|---|---|---|---
General Chemistry & Lab *(CHEM 141 & 144)* | 4 | General Chemistry & Lab *(CHEM 142 & 145)* | 4 | General Chemistry & Lab *(CHEM 143 & 146)* | 4
College Writing I *(ENGL 121)* | 3 | Calculus I *(MATH 181)* | 4 | Calculus II *(MATH 281)* | 4
General Studies | 9 | College Writing II *(ENGL 122)* | 3 | General Studies | 8

**Total** | **16** | **Total** | **16** | **Total** | **16**

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**Sophomore**

**Fall Courses** | **Hours** | **Winter Courses** | **Hours** | **Spring Courses** | **Hours**
---|---|---|---|---|---
Physics Option *(PHYS 211/214 OR 251/254)* | 4 | Physics Option *(PHYS 212/215 OR 252/255)* | 4 | Physics Option *(PHYS 213/216 OR 253/256)* | 4
Calculus III *(MATH 282)* | 4 | Calculus IV *(MATH 283)* | 4 | Statistics Option *(MATH 106 OR 315)* | 4
Research Writing *(ENGL 223)* | 3 | General Studies | 3 | General Studies | 3

**Total** | **16** | **Total** | **16** | **Total** | **16**

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**Junior**

**Fall Courses** | **Hours** | **Winter Courses** | **Hours** | **Spring Courses** | **Hours**
---|---|---|---|---|---
Chemical Equilibrium & Analysis *(CHEM 301)* | 3 | Integrated Chemistry Lab *(CHEM 405)* | 1 | Integrated Chemistry Lab *(CHEM 405)* | 1
Integrated Chemistry Lab *(CHEM 405)* | 1 | General Studies | 15 | Chemistry Seminar *(CHEM 496)* | 1
Foundations of Biochemistry *(CHEM 431)* | 4 | + Analytical Instrumental Methods *(CHEM 302)* | 4 | General Studies | 10
General Studies | 8 | General Studies | 1 | General Studies | 10

**Total** | **16** | **Total** | **16** | **Total** | **16**

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**Senior**

**Fall Courses** | **Hours** | **Winter Courses** | **Hours** | **Spring Courses** | **Hours**
---|---|---|---|---|---
Physical Chemistry *(CHEM 350)* | 3 | Physical Chemistry *(CHEM 352)* | 3 | Physical Chemistry *(CHEM 353)* | 3
Integrated Chemistry Lab *(CHEM 352)* | 1 | Integrated Chemistry Lab *(CHEM 352)* | 1 | Integrated Chemistry Lab *(CHEM 405)* | 1
Directed Research/Project *(CHEM 479)* | 3 | Chemistry Seminar *(CHEM 498)* | 1 | Organic/Inorganic Chemistry Option *(+ CHEM 427 OR - CHEM 442)* | 3 OR 4
Chemistry Seminar *(CHEM 497)* | 1 | General Studies | 11 | General Studies | 12
General Studies | 8 | General Studies | 11 | General Studies | 12

**Total** | **16** | **Total** | **16** | **Total** | **16**