## CHM Chemistry

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hr/Wk</th>
<th>Hr/Wk</th>
<th>Lect/</th>
<th>Clin</th>
<th>Disc</th>
<th>Lab</th>
<th>Cr</th>
<th>Sem</th>
<th>Hr</th>
</tr>
</thead>
</table>

### CHM.100 Concepts of Chemistry

This one-semester course is designed for individuals who have completed less than the equivalent of one year of chemistry. The fundamental concepts of general chemistry developed are appropriate for students interested in further study of chemistry as well as those students who have immediate needs for chemistry. Primary emphasis is placed upon matter, atomic structure, nuclear chemistry, periodicity, stoichiometry, and organic chemistry. A student may NOT count this course toward graduation at CSC if he/she has satisfactorily completed CHM 110 or an equivalent course prior to enrollment in CHM100.

Offered: Fall or Spring or Summer
Prerequisites: MAT.093 or MAT.083 or MAT.086 with a grade of C or better.

Applicable toward graduation at Sandburg where program structure permits:
Degree or Certificate: AA, AS, AFA, AAS, AGS, and Certificates where applicable. IAI Course No. P1 902L
General Education – Science Lab Science

### CHM.110 General Chemistry 1

This is the first semester of two courses that constitute a year’s study of general chemistry. It is designed for the student planning to major in chemistry, engineering, mathematics, science, and related fields that require a comprehensive study of general chemistry. The principal emphasis is upon bonding, gas laws, stoichiometry, nuclear chemistry, and fundamental principles and theories. Laboratory experiments are designed to focus on analytical techniques of volumetric and gravimetric analysis.

Offered: Fall
Prerequisites: One year of high school chemistry or CHM.100 and MAT.099 or its equivalent
Applicable toward graduation at Sandburg where program structure permits:
Degree or Certificate: AA, AS, AFA, AAS, AGS, and Certificates where applicable. IAI Course No. P1 902L
General Education – Science Lab Science

### CHM.120 General Chemistry 2

This is the second course finishing the year’s study of general chemistry. Primary emphasis is placed upon qualitative and quantitative instrumental techniques involving visible and infrared spectroscopy, and gas chromatographic analysis. Special emphasis is given to chemical thermodynamics, electrochemistry, and other selected topics as time permits.

Offered: Spring
Prerequisites: CHM.110
Applicable toward graduation at Sandburg where program structure permits:
Degree or Certificate: AA, AS, AAS, AGS, and Certificates where applicable.
General Education – Not Applicable Elective Only

### CHM.140 Organic and Biochemistry

This one-semester course is designed for individuals who need an introduction to modern organic and biochemistry. The primary interest of the student may be in agriculture, nursing, home economics, or the health sciences - areas of science requiring various degrees of background in organic and biochemistry.

Offered: Spring
Prerequisites: CHM.100 or CHM.110
Applicable toward graduation at Sandburg where program structure permits:
Degree or Certificate: AA, AS, AAS, AGS, and Certificates where applicable.
General Education – Not Applicable Elective Only

### CHM.210 Organic Chemistry 1

This is the first course of two which constitute a year’s study of organic chemistry. Organic Chemistry 1 is required for students planning a major in chemistry and related fields. Primary lecture emphasis is placed upon the study of organic functional groups, reaction mechanisms, nomenclature, structure, stereochemistry, and spectroscopy. The laboratory emphasizes the development of techniques to run organic reactions, to isolate and characterize the products, and the use of computational molecular modeling to gain insight into the structure and reactivity of organic molecules.

Offered: Fall
Prerequisites: CHM.110
Applicable toward graduation at Sandburg where program structure permits:
Degree or Certificate: AA, AS, AAS, AGS, and Certificates where applicable.
General Education – Not Applicable Elective Only

### CHM.220 Organic Chemistry 2

This is the second course of two which constitute a year’s study of organic chemistry. The emphasis in lecture and laboratory is similar to that in Organic Chemistry 1, with the continued study of new functional groups and new reaction mechanisms. Further emphasis is placed upon biomolecules such as carbohydrates and proteins, with a bottom up approach (moving from small molecules to large ones) that contrasts with the top down approach typically used in biology and biochemistry courses.

Offered: Spring
Prerequisites: CHM.210
Applicable toward graduation at Sandburg where program structure permits:
Degree or Certificate: AA, AS, AAS, AGS, and Certificates where applicable.
General Education – Not Applicable Elective Only