Program Overview

- Year 1 – **Basic Science courses**
  - Course specific lab program
- Year 2 – **Core Chemistry courses**
  - Course specific lab programs
- Year 3 – **Strengthening and Broadening**
  - Integrated lab program
- Year 4 – **Expand Your Interests:**
  - **CHEM electives**
  - Independent research project
Admission to 2\textsuperscript{nd} year CHEM

- CHEM 112/6.0
- MATH 121/6.0 (or equiv.)
- PHYS 106/6.0 (104 or 117)
- MATH 112/3.0
  - Can be taken in 2\textsuperscript{nd} year

Cumulative GPA:
- $\geq 1.90$ (BSCH MAJ or SSP)
- $\geq 1.60$ (BSC GEN)
Core courses in 2\textsuperscript{nd} year Chemistry

### Core Courses in Chemistry

<table>
<thead>
<tr>
<th>Fall Term</th>
<th>Winter Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211/3.0 Main Group Chemistry</td>
<td>CHEM 221/3.0 Materials, Solutions and Interfaces</td>
</tr>
<tr>
<td>CHEM 212/3.0 Principles of Chemical Reactivity</td>
<td>CHEM 222/3.0 Methods of Structure Determination</td>
</tr>
<tr>
<td>CHEM 213/3.0 Introduction to Chemical Analysis</td>
<td>CHEM 223/3.0 Organic Reactions</td>
</tr>
</tbody>
</table>
2nd year courses for Chemistry and Biochemistry

Chemistry and Biochemistry Plans

Chemistry

Fall Term  CHEM 211/3.0, 212/3.0, 213/3.0
Winter Term  CHEM 221/3.0, 222/3.0, 223/3.0

Biochemistry

Fall Term  CHEM 211/3.0, 212/3.0
          213/3.0 (elective)
Winter Term  CHEM 222/3.0, 223/3.0
          221/3.0 (elective)
Life Science and Biology programs

Organic Courses for Students in Life Science and Biology Programs

<table>
<thead>
<tr>
<th>Fall Term</th>
<th>Winter Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 281/3.0</td>
<td>CHEM 282/3.0</td>
</tr>
<tr>
<td>General Organic</td>
<td>General Organic</td>
</tr>
<tr>
<td>Chemistry I</td>
<td>Chemistry II</td>
</tr>
</tbody>
</table>

These courses should not be taken by students in Chemistry or Biochemistry degree plans.
3rd Year Chemistry courses

Changes to the 3rd year Chemistry courses (2004/5)

Laboratories have been separated from the lecture courses
# Core courses in 3\(^{\text{rd}}\) year Chemistry

## Fall Term

- **CHEM 311/3.0**  
  Mechanistic Organic Chemistry

- **CHEM 312/3.0**  
  Transition Metal Chemistry

- **CHEM 313/3.0**  
  Quantum Mechanics

- **CHEM 397/6.0**  
  Integrated Lab

## Winter Term

- **CHEM 321/3.0**  
  Instrumental Chemical Analysis

- **CHEM 322/3.0**  
  The Chemical Bond: Computation & Spectroscopy

- **CHEM 323/3.0**  
  Biological Chemistry

- **CHEM 397/6.0**  
  Integrated Lab
4th Year Chemistry courses

In addition to a number of 4th year option courses, students get the opportunity to do an

Honours Research Project (CHEM 497)

working in state-of-the-art research labs in the Chemistry Department
Chemistry as a Teachable subject

Interested in teaching?

Chemistry as a teachable subject:

1\textsuperscript{st} teachable subject:

\hspace{1cm} 1\textsuperscript{st} year Chemistry + 24.0 Chemistry units

2\textsuperscript{nd} teachable subject:

\hspace{1cm} 1\textsuperscript{st} year Chemistry + 18.0 Chemistry units
Chemistry as a Teachable subject

18.0 CHEM beyond 1st year:

• take all of the 2nd year Chemistry courses: 211, 212, 213, 221, 222, and 223, or

• take a selection of 2nd year Chemistry courses and some 3rd year Chemistry courses, for which you would have the 2nd year Chemistry prerequisites (this requires some advance planning)

• Register in a CHEM MIN (Arts or Science) : in order to pre-register in 2nd year CHEM courses (courses are only available to students in a CHEM or BCHM degree program during course registration in July)
Course Registration

• July 14 – 27: Restricted Registration
  • Must be registered in a CHEM or BCHM degree plan to register in CHEM 211, 212, 213, 221, 222, and 223.

• July 28 – Aug. 4: Open Registration
  • Courses open to all students as long as pre-requisites are met.
Programs in Chemistry

- B.Sc.(Honours) Chemistry:
  - Specialisation: CHEM-P-BSH
    - 90 of 120 course units specified
  - Major: CHEM-M-BSH
    - 72 of 120 course units specified

- B.Sc.Chemistry/Minor (Science): CHEM-G-BSC, CHEM-Z
  - 48 of 90 units specified

- B.A. Chemistry/Minor (Arts): CHEM-G-BA, CHEM-Y
  - 30 course units in CHEM + 6 supporting units

- B.Sc.(Honours) Environ. Chemistry: ECHM-P-BSH
  - 102 of 120 course units specified
### Progression Thresholds in Chemistry

<table>
<thead>
<tr>
<th>Program Plan</th>
<th>Acceptance List</th>
<th>Pending List</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum GPA</td>
<td>Course</td>
</tr>
<tr>
<td>BSc(Hons) Chemistry Major</td>
<td>2.7</td>
<td>CHEM112</td>
</tr>
<tr>
<td>BSc(Hons) Chemistry SSP</td>
<td>2.7</td>
<td>CHEM112</td>
</tr>
<tr>
<td>BSc Chemistry General</td>
<td>2.1</td>
<td>CHEM112</td>
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<tr>
<td>Chemistry Minor</td>
<td>2.1</td>
<td>CHEM112</td>
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<tr>
<td>BA Chemistry General</td>
<td>2.1</td>
<td>CHEM112</td>
</tr>
<tr>
<td>Chemistry Minor</td>
<td>2.1</td>
<td>CHEM112</td>
</tr>
</tbody>
</table>
Work Experience

• NSERC USRA
  – Summer undergrad research awards

• SWEP
  – Queen’s summer work experience program

• QUIP
  – Queen’s Internship Program
  – 12-16 month placement, usually after 3rd year
  – Run through Career Services
Further Information

Professor Ralph Whitney  
Chair of Undergraduate Studies  
Department of Chemistry  

Email: ugchair@chem.queensu.ca  

Enrolment limits:  
BSCH (MAJ & SSP) 55, MIN 25, BSC/BA (GEN) 10