CHEMISTRY, BS

for the degree of Bachelor of Science in Chemistry (Specialized Curriculum)

Undergraduate Degree Programs in Chemistry

For the Degree of Bachelor of Science in Liberal Arts and Sciences

- Major in Computer Science & Chemistry, BSLAS (http://catalog.illinois.edu/undergraduate/eng_las/computer-science-chemistry-bslas/)
- Major in Chemistry (Sciences and Letters) (http://catalog.illinois.edu/undergraduate/las/chemistry-bslas/#degreerequirementstext)
- Major in Chemistry (Sciences and Letters), Chemistry Teaching Concentration (http://catalog.illinois.edu/undergraduate/las/chemistry-bslas/chemistry-teaching/)

For the Degree of Bachelor of Science in Chemistry

- Major in Chemistry (Specialized Curriculum) (p. 1)
- Major in Chemistry (Specialized Curriculum), Environmental Chemistry Concentration (http://catalog.illinois.edu/undergraduate/las/chemistry-bs/chemical-engineering/)  

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Specialized Curriculum

The typical program of courses required to satisfy this degree totals 128-134 hours; in no case will a program totaling less than 120 hours qualify for graduation. Graduation requires grade point averages of at least 2.0 overall and 2.0 in chemistry, mathematics, and physics courses. The Department of Chemistry will supply, upon request, a brochure showing recommended semester-by-semester programs for the completion of the curriculum.

Departmental distinction: Students qualify for graduation with distinction by exhibiting superior performance in both course work and in senior thesis research. To be eligible, a student must have a UIUC coursework major grade point average of 3.25, must take CHEM 499 (normally for two semesters) and submit a senior thesis for evaluation, and must have their undergraduate research advisor submit to the department Head a letter of support attesting to the effort invested by the student. The minimum major GPAs for Distinction, High Distinction, and Highest Distinction are 3.25, 3.5, and 3.75, respectively. Final decisions on awarding Distinction honors will be made by the Head or designee.

General education: Students must complete the Campus General Education (https://courses.illinois.edu/gened/DEFAULT/DEFAULT/) requirements including the campus general education language requirement.

Minimum hours required for graduation: 120 hours.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>CHEM 150</td>
<td>First Semester Success in Chemistry</td>
<td>37</td>
</tr>
</tbody>
</table>

CHEM 202 Accelerated Chemistry I
CHEM 203 Accelerated Chemistry Lab I
CHEM 204 Accelerated Chemistry II
CHEM 205 Accelerated Chemistry Lab II  

CHEM 236 Fundamental Organic Chem I
CHEM 237 Structure and Synthesis
CHEM 312 Inorganic Chemistry
CHEM 315 Instrumental Chem Systems Lab
CHEM 420 Instrumental Characterization
CHEM 436 Fundamental Organic Chem II
CHEM 442 Physical Chemistry I
CHEM 444 Physical Chemistry II
CHEM 445 Physical Principles Lab I

Advanced Chemistry

CHEM 317 Inorganic Chemistry Lab
CHEM 437 Organic Chemistry Lab
CHEM 447 Physical Principles Lab II  

Additional laboratory work:

- CHEM 317 Inorganic Chemistry Lab
- CHEM 437 Organic Chemistry Lab
- CHEM 447 Physical Principles Lab II
- CHEM 483 Solid State Structural Anlys

Additional chemistry/biochemistry courses to complete the 11-hour requirement in advanced chemistry

Mathematics:

- MATH 220 Calculus
- MATH 221 Calculus I
- MATH 231 Calculus II
- MATH 241 Calculus III

Physics:

- PHYS 211 University Physics: Mechanics
- PHYS 212 University Physics: Elec & Mag
- PHYS 214 Univ Physics: Quantum Physics

Technical Electives, including the following

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>CHEM 420</td>
<td>Inorganic Chemistry</td>
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<tr>
<td>CHEM 421</td>
<td>Physical Chemistry</td>
<td>5</td>
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<tr>
<td>CHEM 422</td>
<td>Solid State Structural Anlys</td>
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<tr>
<td>CHEM 423</td>
<td>Instrumental Chem Systems Lab</td>
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<td>CHEM 424</td>
<td>Physical Principles Lab    5</td>
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<td>CHEM 425</td>
<td>Inorganic Chemistry Lab</td>
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<td>CHEM 426</td>
<td>Physical Chemistry Lab</td>
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<td>CHEM 427</td>
<td>Physical Principles Lab</td>
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<td>CHEM 428</td>
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<td>CHEM 429</td>
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<td>CHEM 430</td>
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<td>CHEM 432</td>
<td>Physical Chemistry Lab</td>
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<td>CHEM 433</td>
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<td>CHEM 434</td>
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<td>CHEM 438</td>
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<td>CHEM 439</td>
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<tr>
<td>CHEM 440</td>
<td>Physical Principles Lab</td>
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</tbody>
</table>

Other technical courses chosen from:

- Chemistry (300 or higher), biochemistry, chemical engineering (200 or higher)
- Courses in life sciences (all courses at 200 or higher)
- Mathematics or computer science above the basic level

Other courses in the physical and biological sciences and engineering including CHEM 199

Nontechnical Requirements  

General education:
Information listed in this catalog is current as of 09/2023

Students graduating with the BS in Chemistry will have:

1. A thorough knowledge of the basic principles of chemistry, including atomic and molecular structure, chemical dynamics and the chemical and physical properties of substances.
2. An exposure to the subfields of chemistry, such as analytical, organic, physical, materials, inorganic, as well as chemical biology.
3. The ability to read, evaluate, interpret, and present (via oral and written communication) numerical, chemical and general scientific data, information and literature.
4. The ability to carry out experiments, use appropriate experimental apparatus effectively, and demonstrate proper laboratory safety skills.

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### Chemistry

Chemistry website (https://chemistry.illinois.edu)
Chemistry Faculty (https://chemistry.illinois.edu/directory/faculty-by-type/)
SCS Academic Advising (http://advising.scs.illinois.edu/)

### College of Liberal Arts & Sciences

Liberal Arts & Sciences College & Admissions requirements (http://catalog.illinois.edu/undergraduate/las/)
LAS website (https://las.illinois.edu/)