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/environmental-chemistry/)

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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.

Students in the specialized curriculum in Chemistry must include a course in Biochemistry in the Advanced Hours area or the Technical Elective area to be certified by the American Chemical Society as having met its specifications.

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.

Code	Title	Hours
Core Chemistry [1]		37
CHEM 150	First Semester Success in Chemistry [2]	
CHEM 202	Accelerated Chemistry I	
CHEM 203	Accelerated Chemistry Lab I	
CHEM 204	Accelerated Chemistry II	
CHEM 205	Accelerated Chemistry Lab II [3]	
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		11
Chemistry/Biochemistry courses numbered 300 or higher, which must include one from the following:		
CHEM 317	Inorganic Chemistry Lab	
CHEM 437	Organic Chemistry Lab	
CHEM 447	Physical Principles Lab II [4]	
Additional laboratory work:		
BIOC 455	Technqs Biochem & Biotech	
CHEM 317	Inorganic Chemistry Lab	
CHEM 437	Organic Chemistry Lab	
CHEM 447	Physical Principles Lab II	
CHEM 483	Solid State Structural Anlys [5]	
Additional chemistry/biochemistry courses to complete the 11-hour requirement in advanced chemistry		
Mathematics:		11-12
MATH 220	Calculus	
or MATH 221	Calculus I	
MATH 231	Calculus II	
MATH 241	Calculus III	
Physics: [1]		10
PHYS 211	University Physics: Mechanics	
PHYS 212	University Physics: Elec & Mag	
PHYS 214	Univ Physics: Quantum Physics	
Technical Electives, including the following		14
Required Mathematics:		
MATH 225	Introductory Matrix Theory [6]	
or MATH 415	Applied Linear Algebra	
MATH 285 or equivalent		
Strongly Recommended:		
CHEM 499	Senior Thesis (maximum of 10 hours)	
Recommended: basic computer science		
Other technical courses chosen from:		14
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 [7]		
Nontechnical Requirements [8]		Variable
General education:		

Foreign language - three semesters of college study (or three years of high school study) in a single foreign language	
Composition I	
Advanced Composition [9]	
Humanities/Arts to satisfy the campus general education requirements	
Social/Behavioral sciences to satisfy the campus general education requirements	
Cultural Studies to satisfy the campus general education requirement [10]	
Free electives [11]	30

1 *Hours given are those typical to meet requirement.*

2 *On and off-campus transfer students in the BS curriculum may substitute 1 additional hour of 200 level or higher Chemistry (including CHEM 297, CHEM 397, CHEM 496, CHEM 497, or CHEM 499) for CHEM 150. This may not include CHEM 222 or CHEM 223 for students who took the* CHEM 102, CHEM 103, CHEM 104 *and* CHEM 105 *sequence instead of CHEM 202, CHEM 203, CHEM 204, and CHEM 205.*

3 *If necessary, CHEM 102 and CHEM 103, CHEM 104 and CHEM 105, CHEM 222, and CHEM 223 may be substituted for CHEM 202, CHEM 203, CHEM 204, and CHEM 205. Warning: CHEM 222 and CHEM 223 are offered only in the fall semester.*

4 *The course chosen from CHEM 317, CHEM 437, or CHEM 447 cannot be used to satisfy the additional chemistry lab requirement.*

5 *Students who present less than 6 semester hours credit in a combination of CHEM 397, CHEM 497 and/or CHEM 499 for graduation must complete two additional courses chosen from the list. Students who will present at least 6 semester hours credit in a combination of CHEM 397, CHEM 497 and/or CHEM 499 for graduation are required to complete only one laboratory course from the list.*

6 *Students contemplating transfer to the chemical engineering curriculum should choose MATH 415.*

7 *Three hours maximum credit in CHEM 199. Additional courses in the sciences and engineering can be taken upon the approval of the chair of the chemistry department advising committee. Most approved courses must have a strong technical prerequisite, such as one year of college-level math or science.*

8 *The requirements for the Campus General Education categories Natural Sciences and Technology and Quantitative Reasoning I and II are fulfilled through required coursework in the curriculum.*

9 *The courses taken to satisfy Advanced Composition requirement may also be used to partially satisfy one of the core chemistry, advanced chemistry, mathematics, physics, or technical electives requirements (if appropriate), or may be used to partially satisfy the free electives requirements.*

10 *The courses taken to satisfy Western and/or Non-Western Civilization requirements may also be used to satisfy nontechnical and/or free elective categories.*

11 *Restrictions: (1) Courses preparatory to or used to satisfy the minimum requirements specified in the above requirements may not be included as free electives. (2) No first-year foreign language course (e.g., 101, 102, or equivalent) may be included unless it is a different language than used to satisfy the foreign language nontechnical requirement.*

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

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/schools/las/)
LAS website (https://las.illinois.edu/)