

COMPUTER SCIENCE + CHEMISTRY, BSLAS

for the degree of Bachelor of Science in Liberal Arts and Sciences Major in Computer Science + Chemistry

Undergraduate Degree Programs in Chemistry

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

- Major in Computer Science & Chemistry, BSLAS (p. 1)
- 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) (<http://catalog.illinois.edu/undergraduate/las/chemistry-bs/#degreerequirementstext>)
- Major in Chemistry (Specialized Curriculum), Environmental Chemistry Concentration (<http://catalog.illinois.edu/undergraduate/las/chemistry-bs/environmental-chemistry/>)

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A Major Plan of Study Form must be completed and submitted to the LAS Student Affairs Office by the beginning of the fifth semester (60-75 hours).

Please visit the computer science advisor as well as the Chemical Sciences advising office.

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

Minimum required major and supporting course work: Normally equates to 66 hours. Twelve hours of 300- and 400-level in the major must be taken on this campus.

Minimum hours required for graduation: 120 hours.

Code	Title	Hours
Required Computer Science Coursework		
CS 100	Computer Science Orientation (recommended; CS 100 is an orientation course aimed at first-year students, so students who declare the major after the freshman year are not required to complete it.)	1
CS 124	Introduction to Computer Science I	3
CS 128	Introduction to Computer Science II	3
CS 173	Discrete Structures	3
CS 225	Data Structures	4
CS 222	Software Design Lab	1
Choose one of the following combinations		8-11

CS 233 & CS 341	Computer Architecture and System Programming	
OR		
CS 340	Introduction to Computer Systems	
& two CS courses at the 400 level above CS 403, excluding CS 421 and CS 491		
Choose one of the following:		3
STAT 200	Statistical Analysis	
STAT 212	Biostatistics	
CS 361	Probability & Statistics for Computer Science	
CS 374	Introduction to Algorithms & Models of Computation	4
CS 421	Programming Languages & Compilers	3
Mathematics (may also fulfill the General Education Quantitative Reasoning I and II requirements)		
MATH 221	Calculus I	4-5
or MATH 220		Calculus
MATH 225	Introductory Matrix Theory	2 or 3
or MATH 257		Linear Algebra with Computational Applications
MATH 231	Calculus II	3

Required Chemistry Coursework - Minimum of 24 hours

Foundation Courses- 12 hours required

Select one of the following (General or Accelerated Chemistry):		8
CHEM 102 & CHEM 103 & CHEM 104 & CHEM 105	General Chemistry I and General Chemistry Lab I and General Chemistry II and General Chemistry Lab II	

or

CHEM 202 & CHEM 203 & CHEM 204	Accelerated Chemistry I and Accelerated Chemistry Lab I and Accelerated Chemistry II	
CHEM 232	Elementary Organic Chemistry I	4
or CHEM 236		Fundamental Organic Chem I

Advanced Chemistry Courses- 12 hours

CHEM 440	Physical Chemistry Principles	4
or CHEM 442		Physical Chemistry I

In consultation with an advisor, choose 8 hours of 300- or 400-level chemistry courses (The following courses may not be used to complete the advanced chemistry hours: CHEM 315, CHEM 397, CHEM 445, CHEM 447, CHEM 492, CHEM 494, CHEM 496, CHEM 497 and CHEM 499; and any course in another unit, such as any BIOC or MCB course.)		8
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By the time of graduation, students will have:

Computer Science:

1. An ability to apply knowledge of computing and mathematics appropriate to the discipline
2. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution

3. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
4. An ability to function effectively on teams to accomplish a common goal
5. An understanding of professional, ethical, legal, security and social issues and responsibilities
6. An ability to communicate effectively with a range of audiences
7. An ability to analyze the local and global impact of computing on individuals, organizations, and society
8. A recognition of the need for and an ability to engage in continuing professional development
9. An ability to use current techniques, skills, and tools necessary for computing practice
10. An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices
11. An ability to apply design and development principles in the construction of software systems of varying complexity

Chemistry:

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 sub-fields of chemistry, including analytical, inorganic, organic and physical chemistry.
3. The ability to read, evaluate, interpret, and present (via oral and written communication) numerical, chemical and general scientific 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

CS + X Degrees (<https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/#requirements>)

CS + Chemistry (<https://chemistry.illinois.edu/computer-science-chemistry-degree/>)

Chemistry Department page (<https://chemistry.illinois.edu/>)
scs-advising@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/>)

Grainger College of Engineering

Grainger College of Engineering page (<https://grainger.illinois.edu>)
undergrad@cs.illinois.edu (academic@cs.illinois.edu)