

COMPUTER SCIENCE + PHILOSOPHY, BSLAS

for the degree of Bachelor of Sciences in Liberal Arts & Sciences in Computer Science + Philosophy

The CS + Philosophy blended bachelor's degree is a partnership between the Department of Philosophy in the College of Liberal Arts & Sciences and the Siebel School of Computing and Data Science in The Grainger College of Engineering (<https://siebelschool.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/computer-science-philosophy/>). The CS + Philosophy major will prepare you to navigate and push the frontiers of computing where researchers and practitioners often face the same type of questions—from foundational to ethical—that philosophers have tackled for ages. Acquire skills in formal methods, philosophical analysis, and computer programming, all while learning from award-winning faculty invested in the relationship between computer science and philosophy.

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Please see the computer science advisor as well as the philosophy advisor.

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).

Graduation Requirements

Minimum hours required for graduation: 120 hours.

Minimum hours required major and supporting course work: normally equates to 71-73 hours. Twelve hours of 300- and 400-level courses in the major must be taken on this campus.

University Requirements

Minimum of 40 hours of upper-division coursework, generally at the 300- or 400-level. These hours can be drawn from all elements of the degree. Students should consult their academic advisor for additional guidance in fulfilling this requirement.

The university and residency requirements can be found in the Student Code (<https://studentcode.illinois.edu/article3/part8/3-801/>) (§ 3-801) and in the Academic Catalog (<http://catalog.illinois.edu/general-information/degree-general-education-requirements/>).

General Education Requirements

Follows the campus General Education (Gen Ed) requirements (<https://courses.illinois.edu/gened/DEFAULT/DEFAULT/>). Some Gen Ed requirements may be met by courses required and/or electives in the program.

Code	Title	Hours
Composition I		4-6
Advanced Composition		3

Humanities & the Arts (6 hours)	6
fulfilled by PHIL 222 and PHIL 223	
Natural Sciences & Technology (6 hours)	6
Social & Behavioral Sciences (6 hours)	6
Cultural Studies: Non-Western Cultures (1 course)	3
Cultural Studies: US Minority Cultures (1 course)	3
Cultural Studies: Western/Comparative Cultures (1 course)	3
Quantitative Reasoning (2 courses, at least one course must be Quantitative Reasoning I)	6-10
fulfilled by MATH 220 or MATH 231, MATH 231, CS 124, CS 128, CS 225, and PHIL 454	
Language Requirement (Completion of the fourth semester or equivalent of a language other than English is required)	0-20

Major Requirements

Code	Title	Hours
Required Computer Science Courses		
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. These two courses must be distinct from all other courses used to fulfill program requirements or options.	
Choose one of the following:		
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 220 or MATH 221	Calculus I	4-5
MATH 225 or MATH 257	Introductory Matrix Theory or Linear Algebra with Computational Applications	2 or 3
MATH 231	Calculus II	3
Required Philosophy coursework		

PHIL 222	Philosophical Foundations of Computer Science	3
PHIL 223	Minds & Machines	3
PHIL 421	Ethical Theories	3
Choose one of the following:		3
PHIL 426	Metaphysics	
PHIL 430	Theory of Knowledge	
Choose one of the following:		3
PHIL 425	Philosophy of Mind	
PHIL 438	Philosophy of Language	
PHIL 439	Philosophy of Mathematics	
PHIL 477	Philosophy of Psychology	
PHIL 454	Advanced Symbolic Logic	3
PHIL 499	Capstone Seminar	3
In consultation with an advisor, choose at least 9 additional hours of coursework in philosophy, with at least 6 of those hours being at the 300- or 400-level.		9
Total Hours		68-74

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Sample Sequence

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

Students must fulfill their Language Other Than English requirement by successfully completing a fourth level of a language other than English. See the corresponding section on the Degree and General Education Requirements page (<http://catalog.illinois.edu/general-information/degree-general-education-requirements/>).

First Semester

Requirements	Hours
Free Elective course	1
CS 100 - Computer Science Orientation	1
CS 124 - Introduction to Computer Science I	3
PHIL 222 - Philosophical Foundations of Computer Science	3
Composition I or General Education course	4
General Education course	3
Semester Hours	15

Second Semester

Requirements	Hours
CS 128 - Introduction to Computer Science II	3

CS 173 - Discrete Structures	3
PHIL 223 - Minds & Machines	3
MATH 220 - Calculus or MATH 221 - Calculus I	5
General Education course or Composition I	3
Semester Hours	17

First Semester

Requirements	Hours
CS 222 - Software Design Lab	1
CS 225 - Data Structures	4
MATH 225 - Introductory Matrix Theory or MATH 257 - Linear Algebra with Computational Applications	2
Language Other Than English (3rd level)	4
General Education course	3
Semester Hours	14

Second Semester

Requirements	Hours
CS 233 - Computer Architecture or CS 340 - Introduction to Computer Systems	4
STAT 200 - Statistical Analysis, STAT 212 - Biostatistics, or CS 361 - Probability & Statistics for Computer Science	3
MATH 231 - Calculus II	3
Language Other than English (4th level)	4
General Education course	3
Semester Hours	17

First Semester

Requirements	Hours
CS 341 - System Programming (or CS 400-level course)	4
PHIL 426 - Metaphysics or PHIL 430 - Theory of Knowledge	3
PHIL 421 - Ethical Theories	3
PHIL Course	3
General Education course	3
Semester Hours	16

Second Semester

Requirements	Hours
CS 374 - Introduction to Algorithms & Models of Computation	4
CS 400-level course or Free Elective course	3
PHIL 400-level course from list	3
PHIL 454 - Advanced Symbolic Logic	3

General Education course	3
Semester Hours	16

First Semester

Requirements	Hours
CS 421 - Programming Languages & Compilers	3
PHIL 300 - 400 level course	3
General Education course	3
Free Elective course	3
Semester Hours	12

Second Semester

Requirements	Hours
PHIL 499 - Capstone Seminar	3
PHIL 300-400 level course	3
General Education course	3
Free Elective course	4
Semester Hours	13

Total Hours: 120

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CS + Philosophy (<https://philosophy.illinois.edu/academics/undergraduate-studies/cs-philosophy-major/>)

Siebel School of Computing and Data Science

CS + X Degrees (<https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/#requirements>)
 Computer Science email: undergrad@cs.illinois.edu
 The Grainger College of Engineering website (<https://grainger.illinois.edu>)

College of Liberal Arts and Sciences (<https://las.illinois.edu/>)

Overview of College Admissions & Requirements: Liberal Arts & Sciences (<http://catalog.illinois.edu/schools/las/academic-units/>)

Please see the computer science advisor as well as the philosophy advisor.

1. Students will become familiar with traditional topics, theories, and debates in epistemology and metaphysics, in ethics and value theory, and in logic; and familiar with current developments in professional philosophy.
2. Students will gain an understanding of machine learning and the metaphysical and moral issues rising from artificial intelligence, and the various consequences for human dignity and living.
3. Students will develop the ability to analyze persuasive and argumentative prose: identifying the main claims asserted, the reasons alleged to support those claims, and the logical relations between the claims and the reasons, including identifying any gaps in the arguments.
4. In addition to formal methods, students will develop the ability to write clearly and with logical precision on a wide range of important issues, including (but not limited to): civic and social challenges at local, national, and global levels; social and cultural issues related to race, indigeneity, gender, class, sexuality, language, and disability; and the ways that complex, interdependent global systems—natural, environmental, social, cultural, economic, and political—affect and are affected by the local identities and ethical choices of individuals and institutions.

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Department of Philosophy (<http://www.philosophy.illinois.edu/>)

Philosophy Advising (<https://philosophy.illinois.edu/academics/undergraduate-studies/advising/>)