COMPUTER SCIENCE + EDUCATION: LEARNING SCIENCES, BS

for the degree of Bachelor of Science Major in Computer Science + Education, Learning Sciences concentration

The **Computer Science + Education, BS** is sponsored jointly by the Siebel School of Computing and Data Science and the Department of Curriculum & Instruction. The major in Computer Science and Education is a flexible program for undergraduate students who plan to pursue careers in either field and offers two foci of concentration.

The Learning Sciences concentration explores how technology can be intentionally designed to enhance and expand educational experiences. Innovations such as social media, virtual and augmented reality, data analytics, and mobile or wearable devices are transforming how people teach and learn in both formal and informal settings. This program equips students for success in a wide range of career paths—whether pursuing graduate study or entering the workforce in software development, educational publishing, school districts, game design, research organizations, and other education-focused industries.

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To graduate from the Computer Science and Education curriculum, a student must complete all courses with a traditional letter grade.

Code	Title	Hours
Orientation Seminar		
EDUC 101	Education Orientation Seminar	1

The following degree requirements also meet general education course requirements and must be selected from the campus General Education (https://courses.illinois.edu/) course list.

Code	Title	Hours
General Education Requirements		
Composition		
Composition I		4-6
Advanced Composition		3-4
Quantitative Reasoning		
See Computer Science Core and Mathematical Foundations for specific requirement.		
Natural Sciences and Technology		
From approved campus list		6
Humanities and the Arts		
From approved campus list		6
Social and Behavioral Sciences		
From approved campus list		6
Cultural Studies		
Western Culture(s) from approved campus list		3
U.S. Minority Culture(s) from approved campus list		3
Non-Western Culture(s) from approved campus list		3
Language other than English		
Three years of one language other than English in high school or competion of the third semester of college-level language		0-12
Computer Science Core Requirements (fulfills Quantitative Reasoning)		
CS 124	Introduction to Computer Science I	3
CS 128	Introduction to Computer Science II	3
CS 173	Discrete Structures	3
CS 222	Software Design Lab	1
CS 225	Data Structures	4
CS 374	Introduction to Algorithms & Models of Computation	4
Choose 1 from:		8-9
CS 233 & CS 341	Computer Architecture and System Programming	
OR		
CS 340	Introduction to Computer Systems	
& Two CS 4XX	Any two (2) 400-level CS courses	
Choose 1 from:		3
CS 357	Numerical Methods I	
CS 421	Programming Languages & Compilers	
Mathematical Foundations (fulfills Quantitative Reasoning)		
CS 361	Probability & Statistics for Computer Science	3
MATH 220	Calculus	4-5
or MATH 221	Calculus I	
MATH 231	Calculus II	3
Choose 1 from:		2-3
MATH 225	Introductory Matrix Theory	
MATH 227	Linear Algebra for Data Science	
MATH 257	Linear Algebra with Computational Applications	
Concentration		
Students must complete 36-39 credit hours within one of the following areas of concentration: 1) Learning Science or 2) Secondary Education.		36-39
Electives		
Electives		0-8
Total Hours		**120**

Code	Title	Hours
College of Education Foundations		
EPOL 201	Foundations of Education	3-4
or EPOL 202	Foundations of Education-ACP	
Choose 3 from:		9-10
CI 415	Language Varieties, Cultures and Learning	
EPOL 310	Race and Cultural Diversity	
EPSY 201	Educational Psychology	
EPSY 236	Child Development in Education	
EPSY 400	Psychology of Learning in Education	
SPED 117	The Culture of Disability	
Learning Sciences Core		

CI 210	Introduction to Digital Learning Environments	3
CI 489	Educational Technology Capstone Course	3
Choose 1 from:		3
BCOG 100	Introduction to the Brain and Cognitive Science	
EPSY 408		
PSYC 224	Cognitive Psych	
PSYC 248	Learning and Memory	
PSYC 414	Brain, Learning, and Memory	
Choose 2 from:		6
CI 424	Child Development & Technology	
CI 482	Social Learning and Multimedia	
EPSY 405	Personality and Soc Dev	
EPSY 407	Adult Learning and Development	
EPSY 490	Developments in Educational Psychology (Learning in Everyday Contexts)	
Choose 3 from:		9
CI 437	Educational Game Design	
CI 438	Computer Programming and the Classroom	
CI 439		
CI 499	Issues and Development in Education (Attention, Learning, and New Technology)	
CI 499	Issues and Development in Education (Designing Learning Spaces)	
Total Hours		**36-38**

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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. EPOL 202 will satisfy a College of Education Foundations requirement and the Campus General Education Advanced Composition requirement. If EPOL 202 is not selected, a separate Advanced Composition course must be taken.

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

First Year

First Semester	**Hours**
EDUC 101	1
CS 124	3
MATH 220 or 221	4
Composition I or General Education course	4
Language Other Than English (3rd level)	4
	16

Total Hours 16

First Year

Second Semester	**Hours**
CI 210	3
Composition I or General Education course	4
CS 128	3
CS 173	3
General Education course	3
	16

Total Hours 16

Second Year

First Semester	**Hours**
CS 222	1
CS 225	4
MATH 231	3
General Education course	3
College of Education Foundations course	3
	14

Total Hours 14

Second Year

Second Semester	**Hours**
CS 233 or 340	4
MATH 257, 227, or 225	3
EPOL 201 or 202	3
General Education course	3
College of Education Foundations course	3
	16

Total Hours 16

Third Year

First Semester	**Hours**
CS 341 (or CS 400-level course)	4
CS 361	3
Learning Sciences Core course	3
General Education course	3
General Education course	3
	16

Total Hours 16

Third Year

Second Semester	**Hours**
CS 374	4
Learning Sciences Core course	3
Learning Sciences Core course	3

Elective course or CS 400-level course	3
	13

Total Hours 13

Fourth Year

First Semester	**Hours**
CS 357 or 421	3
Learning Sciences Core course	3
College of Education Foundations course	3
General Education course	3
Elective course	3
	15

Total Hours 15

Fourth Year

Second Semester	**Hours**
CI 489	3
Learning Sciences Core course	3
Learning Sciences Core course	3
Elective course	3
Elective course	2
	14

Total Hours 14

Total Hours: 120

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1. Students will acquire deep knowledge of computer science as it relates to the field of Education
2. Students will display the expectations of professionalism related to success in the field of education and beyond (Fairness, commitment to collaboration, community, reflective practice, and attention to 21st century skills and practices).

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College of Education

Education Building
1310 S. Sixth Street, Champaign, IL 61820
College of Education website (https://education.illinois.edu/)

Department of Curriculum & Instruction

306 Education Building
Department of Curriculum & Instruction email: ci@education.illinois.edu
217-244-8286
Department of Curriculum & Instruction website (https://education.illinois.edu/ci/)
Department of Curriculum & Instruction faculty (https://education.illinois.edu/faculty-finder/?dept=Curriculum%20Instruction)

Office of Undergraduate Programs

110 Education Building
Student Academic Affairs email: saao@education.illinois.edu
217-333-2800
Admissions & Academics website (https://education.illinois.edu/programs/undergrad/)
Student Academic Affairs website (https://education.illinois.edu/student-resources/undergraduate/undergraduate-advising-support/)

Siebel School of Computing and Data Science

Thomas M. Siebel Center for Computer Science
201 N Goodwin Avenue, Urbana, IL 61801
Department of Computer Science website (https://cs.illinois.edu/)
Department of Computer Science faculty (https://cs.illinois.edu/about/people/all-faculty/)
Computer Science + Education website (https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/computer-science-education/)