Mathematics & Computer Science, BSLAS

for the degree of Bachelor of Science in Liberal Arts & Sciences Major in Mathematics & Computer Science

Math website: Mathematics & Computer Science (https://math.illinois.edu/academics/undergraduate-program-mathematics/)

Computer science website: Mathematics & Computer Science (https://cs.illinois.edu/academics/undergraduate/degree-program-options/ba-mathematics-computer-science/)

Department website: Mathematics (https://math.illinois.edu/)

Department faculty: Mathematics Faculty (https://math.illinois.edu/directory/faculty/)

Overview of college admissions & requirements: Liberal Arts & Sciences (http://catalog.illinois.edu/schools/las/academic-units/)

College websites: https://las.illinois.edu/ and https://engineering.illinois.edu

Math email: mathadvising@illinois.edu

Computer science email: undergrad@cs.illinois.edu

(academic@cs.illinois.edu)

Undergraduate programs in Mathematics

Actuarial Science, BSLAS (http://catalog.illinois.edu/undergraduate/las/actuarial-science-bslas/)

Mathematics, BSLAS (http://catalog.illinois.edu/undergraduate/las/mathematics-bslas/#text)

Mathematics & Computer Science, BSLAS (p. 1)

for the degree of Bachelor of Science in Liberal Arts and Sciences: Major in Mathematics & Computer Science

Departmental distinction: To graduate with distinction requires a specified minimum grade point average in all Computer Science and Mathematics courses listed below. A GPA of 3.25 is required for Distinction, 3.5 for High Distinction, and 3.75 for Highest Distinction. In addition, students must complete at least three semester hours of additional Computer Science or Mathematics courses selected from the following: CS 196, CS 296, CS 397, CS 492, CS 493, CS 499, any CS course numbered 411 or higher, MATH 412, MATH 414, MATH 417, MATH 418, MATH 423, MATH 432, MATH 448, MATH 482, MATH 496.

NOTE: A student taking a cross-listed course in this major may designate it as either mathematics or computer science.

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 70 hours. Twelve hours of 300- and 400-level in the major must be taken on this campus. Minimum hours required for graduation: 120 hours.

Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 100</td>
<td>Freshman Orientation (recommended)</td>
<td>1</td>
</tr>
<tr>
<td>Calculus through MATH 241-Calculus III</td>
<td>11-12</td>
<td></td>
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</tbody>
</table>

CS 124     Introduction to Computer Science I  3
CS 128     Introduction to Computer Science II 3
MATH 347   Fundamental Mathematics  3
or MATH 348 Fundamental Mathematics-ACP  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     Computer Architecture & CS 241   and System Programming

OR

CS 240     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.

CS/MATH 357 Numerical Methods I  3
CS 374     Introduction to Algorithms & Models of Computation  4
CS 421     Programming Languages & Compilers  3
CS 450     Numerical Analysis  3 or 4
MATH 415   Applied Linear Algebra  3
or MATH 416 Abstract Linear Algebra  3

400-level mathematics and computer science requirements:  18

Students must select at least six 400-level mathematics and computer science courses, including one from each of the following groups:

GROUP I

CS 361     Probability & Statistics for Computer Science (recommended)
MATH 461   Probability Theory
STAT 400/ MATH 463 Statistics and Probability I

GROUP II

MATH 412   Graph Theory
MATH 413   Intro to Combinatorics
MATH 417   Intro to Abstract Algebra
MATH 427   Honors Abstract Algebra

GROUP III

MATH 441   Differential Equations
MATH 446   Applied Complex Variables
MATH 484   Nonlinear Complex Variables

GROUP IV

MATH 424   Honors Real Analysis
MATH 444   Elementary Real Analysis
MATH 447   Real Variables

GROUP V

MATH 414   Mathematical Logic
CS/MATH 473 Algorithms
CS/MATH 475 Formal Models of Computation

CS 476     Program Verification
CS 477     Formal Software Development Methods

Total Hours  68-76

Information listed in this catalog is current as of 08/2021