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/bs-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

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 482, MATH 484, MATH 496, MATH 498. These two courses must be distinct from all other courses used to fulfill program requirements or options.

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>
</tr>
<tr>
<td>CS 124</td>
<td>Introduction to Computer Science I</td>
<td>3</td>
</tr>
<tr>
<td>CS 128</td>
<td>Introduction to Computer Science II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 347</td>
<td>Fundamental Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 348</td>
<td>Fundamental Mathematics-ACP</td>
<td></td>
</tr>
<tr>
<td>CS 173</td>
<td>Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 225</td>
<td>Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>CS 222</td>
<td>Software Design Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

Choose one of the following combinations 8-11

- CS 233 and System Programming
- 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 | |
- 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 | |

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 01/2022