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-by-type)  

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)

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 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>
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</thead>
<tbody>
<tr>
<td>CS 100</td>
<td>Freshman Orientation (recommended)</td>
<td>0-1</td>
</tr>
<tr>
<td>Calculus through MATH 241-Calculus III</td>
<td>11-12</td>
<td></td>
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<tr>
<td>MATH 347</td>
<td>Fundamental Mathematics</td>
<td>3</td>
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<tr>
<td>or MATH 348</td>
<td>Fundamental Mathematics-ACP</td>
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<tr>
<td>CS 125</td>
<td>Intro to Computer Science</td>
<td>4</td>
</tr>
<tr>
<td>CS 126</td>
<td>Software Design Studio</td>
<td>3</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 233</td>
<td>Computer Architecture</td>
<td>4</td>
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</tbody>
</table>

CS 241  System Programming       4  
CS/MATH 357 Numerical Methods I   3  
CS 374  Introduction to Algorithms & Models of Computation 4  
CS 421  Programming Languages & Compilers 3  
CS 457  Numerical Methods II      3  
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 417 Intro to Abstract Algebra

GROUP III
MATH 441 Differential Equations  
MATH 446 Applied Complex Variables  
MATH 484 Nonlinear Programming

GROUP IV
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 Devel Methods  
CS 481 Advanced Topics in Stochastic Processes & Applications  
CS 482 Simulation

Information listed in this catalog is current as of 12/2019