for the degree of Bachelor of Science in Liberal Arts & 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 297, 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 484, 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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<tbody>
<tr>
<td>CS 100</td>
<td>Freshman Orientation (recommended)</td>
<td>0-1</td>
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<tr>
<td></td>
<td>Calculus through MATH 241-Calculus III</td>
<td>11-12</td>
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<tr>
<td>MATH 347</td>
<td>Fundamental Mathematics</td>
<td>3</td>
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or MATH 347 Fundamental Mathematics-ACP

CS 125 Intro to Computer Science 4
CS 126 Software Design Studio 3
CS 173 Discrete Structures 3
CS 225 Data Structures 4
CS 233 Computer Architecture 4
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 41 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
- 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

GROUP V
- CS/MATH 475 Formal Models of Computation
- CS 476 Program Verification
- CS 477 Formal Software Development Methods
- CS 481 Advanced Topics in Stochastic Processes & Applications
- CS 482 Simulation