STATISTICS & COMPUTER SCIENCE, BSLAS

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

This major is sponsored jointly by the Departments of Statistics and Computer Science. The Statistics and Computer Science major is designed for students who would like a strong foundation in computer science, coupled with significant advanced coursework in statistics. The major prepares students for professional or graduate work in statistics and computer science, and for applications of computing in which knowledge of statistics is particularly important, such as data mining and machine learning.

Undergraduate degree programs in Statistics

- Statistics, BSLAS (http://catalog.illinois.edu/undergraduate/las/statistics-bslas/#degreerequirementstext)
- Statistics & Computer Sciences, BSLAS (p. 1)

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Departmental distinction: To graduate with distinction requires a specified minimum grade point average in all Computer Science, Statistics, 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CS 100</td>
<td>Computer Science Orientation (recommended)</td>
<td>1</td>
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</tbody>
</table>

Mathematical Foundation

- Calculus through MATH 241: Calculus III 11-12
- MATH 257 Linear Algebra with Computational Applications 3
- or MATH 415 Applied Linear Algebra

Computer Science Foundation

- 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

Choose one of the following combinations: 8-11
- CS 233 Computer Architecture
- & CS 341 and System Programming

OR
- CS 340 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.

<table>
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<th>Code</th>
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<tbody>
<tr>
<td>CS 357</td>
<td>Numerical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>CS 374</td>
<td>Introduction to Algorithms &amp; Models of Computation</td>
<td>4</td>
</tr>
<tr>
<td>CS 421</td>
<td>Programming Languages &amp; Compilers</td>
<td>3</td>
</tr>
</tbody>
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Probability and Statistics Foundation

Choose one of the following: 3-4
- STAT 107 Data Science Discovery
- STAT 200 Statistical Analysis
- STAT 212 Biostatistics
- STAT 400 Statistics and Probability I 4
- STAT 410 Statistics and Probability II 3 or 4
- STAT 425 Statistical Modeling I 3 or 4
- STAT 426 Statistical Modeling II 3 or 4

Statistical Application Electives - Choose one of the following: 3
- STAT 428 Statistical Computing
- STAT 431 Applied Bayesian Analysis
- STAT 432 Basics of Statistical Learning
- STAT 434 Survival Analysis
- STAT 448 Advanced Data Analysis

Computational Application Elective - Choose one of the following: 3
- CS 410 Text Information Systems
- CS 411 Database Systems
- CS 412 Introduction to Data Mining
- CS 446 Machine Learning
- CS 481 Advanced Topics in Stochastic Processes & Applications
- CS 482 Simulation

Total Hours 68-72

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


Computer science degree information: Statistics & Computer Science (https://cs.illinois.edu/academics/undergraduate/degree-program-options/bs-statistics-computer-science/)

Statistics advising: department advising information (https://stat.illinois.edu/academics/advising/)

Computer science advising: department advising information (https://cs.illinois.edu/academics/undergraduate/undergraduate-advising/)

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

College websites: https://las.illinois.edu/ and https://grainger.illinois.edu (https://grainger.illinois.edu/)

Statistics email: stat-advising@illinois.edu

Computer science email: undergrad@cs.illinois.edu

Information listed in this catalog is current as of 06/2023