

# STATISTICS AND 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. See also Computer Science (<http://catalog.illinois.edu/undergraduate/las/comp-science/#majortext>), Mathematics (<http://catalog.illinois.edu/undergraduate/las/academic-units/math>), Mathematics and Computer Science (<http://catalog.illinois.edu/undergraduate/las/academic-units/math/mathematics-computer-science-major>), and Statistics (<http://catalog.illinois.edu/undergraduate/las/academic-units/stats>).

## Major in Sciences and Letters Curriculum

E-mail: [stat-office@illinois.edu](mailto:stat-office@illinois.edu) or [academic@cs.illinois.edu](mailto:academic@cs.illinois.edu) ([academic@cs.uiuc.edu](mailto:academic@cs.uiuc.edu))

Degree title: Bachelor of Science in Liberal Arts and Sciences

Minimum required major and supporting course work normally equates to 68-69 hours

General education: Students must complete the Campus General Education (<https://courses.illinois.edu>) requirements including the campus general education language requirement.

Twelve hours of 300 and 400-level courses must be taken on this campus.

Minimum hours required for graduation: 120 hours

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.

Code	Title	Hours
CS 100	Freshman Orientation (recommended)	0-1
Calculus through MATH 241 - Calculus III		11-12
MATH 415	Applied Linear Algebra	3
Required Computer Science Foudation:		32
CS 125	Intro to Computer Science	
CS 173	Discrete Structures	
CS 126	Software Design Studio	
CS 225	Data Structures	
CS 233	Computer Architecture	
CS 241	System Programming	
CS 357	Numerical Methods I	
CS 374	Introduction to Algorithms & Models of Computation	
CS 421	Progrmg Languages & Compilers	
Required Probability and Statistics Foundation:		10

STAT 400	Statistics and Probability I <sup>1</sup>	
STAT 410	Statistics and Probability II	
STAT 428	Statistical Computing	
At least four other statistics, computer science, or mathematics courses, with at least one chosen from each of the following groups:		12
Group I: Statistical Methods		
STAT 200	Statistical Analysis	
STAT 212	Biostatistics	
CS 361	Probability & Statistics for Computer Science	
Group II: Mathematical Analysis and Modeling		
MATH 347	Fundamental Mathematics	
MATH 441	Differential Equations	
MATH 444	Elementary Real Analysis	
MATH 447	Real Variables	
Group III: Computational Application Areas		
STAT 385	Statistics Programming Methods	
CS 410	Text Information Systems	
CS 411	Database Systems	
CS 412	Introduction to Data Mining	
CS 446	Machine Learning	
CS 481	Stochastic Processes & Applic	
CS 482	Simulation	
Group IV: Statistical Analysis and Modeling		
STAT 420	Methods of Applied Statistics	
STAT 425	Applied Regression and Design	
STAT 426	Sampling and Categorical Data	
STAT 448	Advanced Data Analysis	

<sup>1</sup> Students should take a course from Group I before taking *STAT 400*.