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 or academic@cs.illinois.edu (academic@cs.uiuc.edu)

Degree title: Bachelor of Science in Liberal Arts and Sciences

Minimum required major and supporting course work normally equates to 70-72 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.

Calculus through MATH 241 - Calculus III 11-12
MATH 415 Applied Linear Algebra 3 OR 4

Required Computer Science Courses: 28
CS 125 Intro to Computer Science
CS 173 Discrete Structures
CS 225 Data Structures
CS 233 Computer Architecture
CS 241 System Programming
CS 242 Programming Studio
CS 357 Numerical Methods I
CS 373

Required Statistics courses: 10
STAT 400 Statistics and Probability I
STAT 410 Statistics and Probability II
STAT 428 Statistical Computing

Other Specified Requirements. At least six other statistics, computer science, and mathematics courses, with at least one chosen from each of the following groups:

Group I: Applied Statistics
STAT 200 Statistical Analysis (or a 300 or 400-level statistics course, with STAT 426 recommended) 1

Group II: Analysis and Differential Equations
MATH 347 Fundamental Mathematics
MATH 441 Differential Equations
MATH 444 Elementary Real Analysis
MATH 447 Real Variables

Group III: Foundations
CS 473 Fundamental Algorithms
CS 475 Formal Models of Computation

Group IV: Software
CS 421 Progrmg Languages & Compilers
CS 423 Operating Systems Design

Group V: Application software
CS 411 Database Systems
CS 418 Interactive Computer Graphics
CS 446 Machine Learning

Group VI: Linear Regression Analysis
STAT 420 Methods of Applied Statistics
STAT 424 Analysis of Variance
STAT 425 Applied Regression and Design

1 STAT 200 should be taken during the first 60 hours of course work (to provide the student with an early introduction to statistical concepts). The latter option of a 300 or 400-level statistics course is designed for students who wish to take STAT 400 before the junior year.