

# STATISTICS

## THE GEORGE R. BROWN SCHOOL OF ENGINEERING

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### LECTURER

L. Scott Baggett

### FACULTY FELLOW

Janet Siefert

## DEGREES OFFERED: BA, MSTAT, MA, PHD

Course work in statistics acquaints students with the role played in the modern world by probabilistic and statistical ideas and methods. Students grow familiar with both the theory and the application of techniques in common use as they are trained in statistical research. The flexibility of the undergraduate program allows students to concentrate on theoretical or applied training, or they may link their studies in statistics to work in other related departments (see majors in economics, education, electrical and computer engineering, computational and applied mathematics, managerial studies, mathematics, political science, and psychology). Graduate study has concentrations in applied probability, bioinformatics, biomathematics, biostatistics, computational finance, data analysis, density estimation, epidemiology, image processing, model building, quality control, statistical computing, spatical processes, stochastic processes, and time series analysis. A joint MBA/master of statistics degree also is available in conjunction with the Jesse H. Jones Graduate School of Management.

## DEGREE REQUIREMENTS FOR BA IN STATISTICS

For general university requirements, see Graduation Requirements (pages 16–19). The degree requirements in statistics are:

- MATH 101/102 *Single Variable Calculus I and II*
- MATH 211 *Ordinary Differential Equations and Linear Algebra*
- CAAM 210 or 211 *Introduction to Engineering Computation*
- STAT 310 *Probability and Statistics*
- STAT 405 *Statistical Computing and Graphics*
- STAT 410 *Introduction to Statistical Computing and Regression*
- 6 elective courses at the 300 level or higher. At least 4 courses must be from the Department of Statistics. Courses not from the Department of Statistics require approval from a statistics major advisor. STAT 305 and STAT 331 may not count as electives; jointly they may substitute for STAT 310.

Mathematically oriented students should also take MATH 212 *Multivariable Calculus* and MATH 355 *Linear Algebra* (or CAAM 335 *Matrix Analysis*).

The department offers a minor in computational finance jointly with the economics department (see Financial Computation and Modeling minor).

## DEGREE REQUIREMENTS FOR MSTAT, MA, AND PHD IN STATISTICS

For general university requirements, see Graduate Degrees (pages 61–62). Admissions applications should include scores on the Graduate Record Examination (GRE) in the quantitative, verbal, and analytical tests. Financial support is available for well-qualified doctoral students. Course work for all degree programs should be at the 400 level or above, although 2 approved 300-level courses may be accepted.

**Master's Programs**—Candidates for the nonthesis MStat degree must complete 30 semester hours of approved course work. Candidates for the MA degree in statistics must complete 30 semester hours of approved course work as well as 1 of the following: (1) complete an original thesis and defend it in a public oral examination; or (2) perform satisfactorily on the 2nd-year PhD comprehensive examinations and complete a major project.

**PhD Program**—Candidates for the PhD degree in statistics must complete at least 90 semester hours of approved course work beyond the bachelor's degree and a minimum of 60 hours beyond a master's degree, perform satisfactorily on preliminary and qualifying examinations, and complete an original thesis with a public oral defense. All STAT graduate students are assigned a limited amount of teaching and other departmental service as part of their graduate education. The assignment usually entails less than 10 hours per week, averaged over the semester. Students completing the PhD degree in four years will be assigned no more than six semesters of service.

**See STAT in the Courses of Instruction section.**