

Biostatistics (M.S.)

Master of Science

<http://statistics.gmu.edu>

Phone: 703-993-3645, statistics@gmu.edu

Program Overview

Mason Engineering offers a Master of Science in Biostatistics through its Department of Statistics. The MS in Biostatistics will allow students to specialize in the design and analysis of health-related and biological studies, while maintaining the rigor and technical training of the Statistical Science master's program. In this degree, students will take a statistics core and a "bio" core, involving courses in public health, biology, and clinical medicine. It also involves a research core which allows students to solve real data problems in the biological or health area. Finally, students will choose from electives in bioinformatics, global and community health, or targeted statistics courses. This graduate degree prepares students for analyzing difficult data specific to biology and health. The program, with its research core, will also be sufficiently rigorous for students who wish to pursue a PhD in Biostatistics.

The Department of Statistics is the primary academic unit at Mason for research and instruction in statistical science. Our faculty perform cutting-edge research and are actively involved with federal agencies through grants and contracts. The department's proximity to federal agencies has largely shaped the curricula. These agencies include the Army Research Office, Bureau of Labor Statistics, Environmental Protection Agency, Food and Drug Administration, National Institutes of Health, National Science Foundation, Office of Naval Research, and U.S. Census Bureau.

Program Requirements

All students must complete 30 graduate credits, including eight core courses and four elective courses. The statistics core provides the basic probability, statistical analysis techniques, and statistical modeling tools that all biostatisticians must know, and provides a basis for higher level elective coursework. The "Bio" core provides the biological background necessary for biostatisticians. These courses offer preparation in the areas of public health and epidemiology, as well as biology, including genetics and proteomics. In addition, this portion of the core curriculum ensures that students are trained in the statistical techniques required for clinical medicine, and includes material on ethics in research. The research core assists students in the development of the requisite skills for careers in consulting or research. These courses will allow students to work on real data problems and provide opportunities to write reports.

Core courses include:

- Applied Probability
- Applied Statistics I
- Applied Statistics II
- Introduction to Epidemiology
- Bioinformatics Methods
- Biostatistics Methods
- Case Studies in Data Analysis
- Master's Research Project

Refer to the department's website for more information on program course offerings and details on program requirements.

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Related Programs

- Statistical Science, PhD
- Mathematics and Statistical Science Dual-Degree, MS
- Operations Research and Statistical Science Dual-Degree, MS
- Statistical Science, MS
- Data Analytics Engineering (Concentration in Statistics for Analysis), MS

Distance education courses may be available for select programs. Graduate Certificate degree programs may also be offered. Please visit our website for details.

Admission Requirements

In addition to satisfying general admission requirements for graduate study, all applicants must hold a bachelor's degree from an accredited institution (minimum 3.0 GPA) in a field that includes coursework in multivariable calculus, matrix or linear algebra, statistics, and calculus-based probability. Applicants with degrees in such fields as mathematics, statistics, and some engineering programs usually meet these requirements. For applicants with degrees in other fields, these requirements are normally satisfied if students have successfully completed courses equivalent to the following Mason courses: MATH 113, MATH 114, MATH 213; MATH 203 or MATH 321; STAT 250 or STAT 344; and STAT 346 or MATH 351. Coursework taken to correct deficiencies in undergraduate preparation is not counted toward the degree.

Required application materials include:

- Online application and non-refundable fee
- Transcripts showing all post-secondary study
- Professional and Educational Goals Statement
- Two letters of recommendation from professors or senior officials at place of employment
- Resume

Additional application materials, including English proficiency examination scores (e.g., TOEFL, IELTS), are required if the applicant holds a degree from an international institution and/or requires an F-1 or J-1 visa. Visit <http://admissions.gmu.edu/grad/> for details.

Special admission programs are available for Volgenau School students and alumni.

Visit our website for details: <http://statistics.gmu.edu>

Apply online: <http://admissions.gmu.edu/grad/applynow/>