

Applied Statistics and Data Science

Admission Requirements

Applicants for admission to the program in Applied Statistics and Data Science must hold a bachelor's degree and must have completed undergraduate courses in multivariable calculus (usually calculus III) and matrix/linear algebra. The Graduate Record Examination (GRE) is optional, though it is highly recommended for applicants seeking funding or for applicants whose degree is from outside the United States. Individuals with degrees in areas other than mathematics and statistics are encouraged to apply.

Degree Requirements

Students must successfully complete ten approved courses (30 credits), including six required courses. The six required courses are STAT 7404, STAT 7500, STAT 8400, STAT 8406, and two of the following three: STAT 8401, STAT 8412, and STAT 8480. Students must also maintain at least a 3.00 Grade Point Average (GPA) and pass a comprehensive examination covering the material taught in STAT 7404, STAT 7500, and STAT 8406. Candidates for the Master's degree have six years to complete their degree after starting the program. Students are to consult with the Director of the Applied Statistics Graduate Program to formulate a program of study suited to their individual needs.

Scheduling Courses

Students in the program in Applied Statistics and Data Science must complete STAT 7404 and STAT 8400 within their first 15 credits and, depending on choice of required courses, STAT 8401 within their first 21 credits. For a typical full-time student, the following four courses should be taken during the first year of studies: STAT 7404, STAT 7500, and STAT 8400 in the first fall semester and STAT 8406 in the first spring semester. Depending on choice of required courses, STAT 8401 may also be taken in the first spring semester followed by STAT 8412 and/or STAT 8480 in the second fall semester. For most students, none of the four elective courses are taken until the first spring or second fall semester. Modifications to typical schedules may be made with approval by the Director of the Applied Statistics Graduate Program. In some cases, a student may be approved to waive a required course if they have adequate previous training in the area (so that an additional elective course may be taken).

MSAS Comprehensive Examination

The Applied Statistics Comprehensive Exam is a three-hour exam that covers material from Statistical Methods (STAT 7404), Statistical Programming (STAT 7500), and Regression Methods (STAT 8406). The exam is offered once in the fall semester and once in the spring semester. To be eligible to take the exam, a student must have completed at least 21 credit hours prior to the semester in which the student takes the exam. The student must also have completed at least five of the six required courses and, if all six required courses have not been completed, be enrolled in the sixth required course. In the event that a student does not pass the exam on the first try, one re-examination will be permitted.

Program: [Mathematics and Statistics](#)

Type: Master of Science

Required Courses

| Item # | Title | Credits |
|---------------|----------------------------|----------------|
| STAT 7404 | Statistical Methods | 3 |
| STAT 7500 | Statistical Programming | 3 |
| STAT 8400 | Statistical Theory I | 3 |
| STAT 8406 | Regression Methods | 3 |
| | Choice of Required Courses | 6 |

Elective Courses

Certain courses listed in other graduate programs may serve as electives with the prior approval of the Director of the Applied Statistics Graduate Program.

| Item # | Title | Credits |
|---------------|--------------------------------|----------------|
| STAT 8408 | Multivariate Methods | 3 |
| STAT 8410 | Bayesian Statistics | 3 |
| STAT 8414 | Categorical Data Anal | 3 |
| STAT 8416 | Design of Experiments | 3 |
| STAT 8440 | Statistics Quality Control | 3 |
| STAT 8446 | Survival Data Analysis | 3 |
| STAT 8448 | Clinical Trials | 3 |
| STAT 8450 | Longitudinal Data Analysis | 3 |
| STAT 8452 | Nonparametric Statistics | 3 |
| STAT 8454 | Sampling Methods | 3 |
| STAT 8462 | Stochastic Modeling | 3 |
| STAT 8470 | | |
| STAT 8480 | Data Mining & Predictive Analy | 3 |
| STAT 8490 | | |
| STAT 8790 | Selected Topics I | 3 |
| MAT 8430 | Operations Research | 3 |
| STAT 8444 | Time Series & Forecasting | 3 |