Department of Applied Economics and Statistics

Statistics Certificate

Provide a brief summary of the proposed program changes and describe the rationale for the change(s):\*

Do not require an application for students currently enrolled at the University of Delaware.

Of the 5 required courses, allow 2 of the courses to be outside of STAT, by permission. The 2 courses must be beyond what is required.

Required Foundation Courses:

Description

The two required foundation courses are designed as entry courses, STAT 608 and STAT 609. These courses would provide a foundation of statistical inference, design of experiments, and regression analysis. However, a student could petition that these courses be waived if they could sufficiently demonstrate that they have taken similar courses in another discipline or degree. The decision to waive one or both of the foundation courses would be made at the time of application to the certificate program by a committee within the Statistics Program. It is the responsibility of the student to provide sufficient evidence (syllabus or course description) to waive these courses. If the foundation courses are waived, the student would be required to take two additional courses in the statistics curriculum.

Up to two courses can be substituted for this Certificate, with the following restrictions:

The courses must be graduate courses at the University of Delaware.

The courses must be in consultation with and approved by your advisor in Applied Economics and Statistics.

The courses must be beyond the required courses by your department and your degree at the University of Delaware.

The purpose of the certificate is to go beyond what is typically required. All substitutions must meet this requirement.

Courses

STAT 608 Statistical Research Methods (3cr.)

STAT 609 Regression and Experimental Design (3cr.)

These courses are designed for students with limited background in statistics who want to gain an appreciation of the logic of inference in confidence intervals and hypotheses tests, along with an introduction to basic multivariate approaches of experimental design and regression. These course are currently being taught with JMP software. These courses would not count toward a M.S. in Statistics.

Required Intermediate Courses:

STAT 611 Regression Analysis (3cr.)

STAT 615 Design and Analysis of Experiments (3cr.)

These courses are considered essential training for anyone who participates in statistics. These courses are typically taught using SAS software.

Additional Courses

STAT 601 Probability Theory for Operations Research and Statistics (3cr.)

- requires advanced calculus

STAT 602 Mathematical Statistics (3cr.)

- requires advanced calculus

STAT 613 Applied Multivariate Statistics (3cr.)

- this course would not count toward a M.S. in Statistics

STAT 616 Advanced Design of Experiments (3cr.)

- requires completion of STAT 615

STAT 617 Multivariate Methods (3cr.)

- requires advanced calculus and linear algebra

STAT 619 Time Series Analysis (3cr.)

STAT 620 Nonparametric Statistics (3cr.)

STAT 621 Survival Analysis (3cr.)

STAT 656 Biostatistics (3cr.)

STAT 670 Intro to Stat Analysis I (3cr.)

- requires calculus; this course would not count toward a M.S. in Statistics

STAT 671 Intro to Stat Analysis II (3cr.)

- requires calculus; this course would not count toward a M.S. in Statistics

STAT 674 Applied Data Base Management (3cr.)

STAT 675 Logistic Regression (3cr.)

Description

These courses are generally taught with SAS, R, or JMP. STAT 674 exclusively uses SAS. Students would be required to learn to use SAS on their own for these courses. Some of these courses require advanced mathematics and prerequisite courses within the program, as noted above.

Last Revised for 2019-2020

Description

STAT - 601 - Probability Theory for Operations Research and Statistics (3cr.)

STAT - 602 - Mathematical Statistics (3cr.)

STAT - 608 - Statistical Research Methods (3cr.)

STAT - 609 - Regression and Experimental Design (3cr.)

STAT - 611 - Regression Analysis (3cr.)

STAT - 613 - Applied Multivariate Statistics (3cr.)

STAT - 615 - Design and Analysis of Experiments (3cr.)

STAT - 616 - Advanced Design of Experiments (3cr.)

STAT - 617 - Multivariate Methods (3cr.)

STAT - 619 - Time Series Analysis (3cr.)

STAT - 620 - Nonparametric Statistics (3cr.)

STAT - 621 - Survival Analysis (3cr.)

STAT - 656 - Biostatistics (3cr.)

STAT - 670 - Intro to Stat Analysis I (3cr.)

STAT - 671 - Intro to Stat Analysis II (3cr.)

STAT - 674 - Applied Data Base Management (3cr.)

STAT - 675 - Logistic Regression (3cr.)