

APPLIED STATISTICS, CERTIFICATE IN (GRADUATE CERTIFICATE)

The Certificate in Applied Statistics will train students on the assumptions associated with applied statistics procedures and prepare them to apply the procedures to real data. Students will learn statistical packages that allow them to perform the procedures and learn the proper interpretation of the results. Graduates will be able to apply the procedures in many high-demand areas, including industry, government and professional/financial businesses.

The graduate certificate is appropriate for working professionals in government agencies and the financial sector who want to advance their careers by acquiring new skills and learning new topics in applied statistics. Individuals who are considering a graduate degree in statistics may also be interested, as all courses in this program would transfer to an M.S. within the statistics department.

Full-time students can complete the certificate in one year (two semesters) with a course load of six credits each in a fall and spring semester. Part-time students can complete the certificate in two years (four semesters) with a three-credit load each semester.

Student learning outcomes

1. Students will demonstrate a comprehensive understanding of basic statistical concepts and general linear modeling.
2. Students will know how to select appropriate samples and conduct appropriate experimental data collection methods.
3. Students will be able to perform appropriate analysis of data, including knowledge of the assumptions associated with the procedures and how to determine the appropriate procedure to use.
4. Students will be able to use statistical software packages to solve various problems.
5. Students will know how to clearly and concisely present technical information in writing.

VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs

The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the Graduate School website (<http://www.graduate.vcu.edu/>) and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

Visit the **academic regulations section** for additional information on academic regulations for graduate students. (<http://bulletin.vcu.edu/academic-regs/>)

Graduation requirements

As graduate students approach the end of their academic programs and the final semester of matriculation, they must make formal application to graduate. No degrees will be conferred until the application to graduate has been finalized.

Graduate students and program directors should refer to the following graduation requirements as published in the Graduate Bulletin for a complete list of instructions and a graduation checklist.

Visit the **academic regulations section** for additional information on graduation requirements. (<http://bulletin.vcu.edu/academic-regs/grad/graduation-info/>)

Apply online today. (<https://www.vcu.edu/admissions/apply/graduate/>)

Admission requirements

Degree:	Semester(s) of entry:	Deadline dates:	Test requirements:
Certificate	Fall	Mar 1	

The admission requirements outlined below will apply to all students. All applicants to the graduate certificate programs are required to meet the admission requirements of the VCU Graduate School (<http://bulletin.vcu.edu/graduate/study/admission-graduate-study/admission-requirements/>). Applicants will be required to submit the following materials to the Graduate School admissions office:

- Application form and application fee
- Three letters of recommendation, professional and/or academic
- Official undergraduate transcripts from all schools attended
- A statement of purpose outlining career goals
- A resume stating relevant work experience.

The Department of Statistical Sciences and Operations Research requires that students demonstrate the following:

- Have earned an undergraduate degree in an area related to applied mathematics, or in another discipline that requires mathematics through calculus and linear algebra and statistics
- Have computing/technology skills that would allow the student to learn and use several statistical software packages

A maximum of three equivalent, graduate-level transfer credit hours at the 500-level or higher may count toward the certificate. The transfer credits are evaluated on a case-by-case basis to determine course equivalency.

Credits from a degree already awarded cannot be applied toward the certificate.

International students will submit an official transcript evaluation from a recognized foreign educational credentials evaluation service accredited by the National Association of Credential Evaluation Service or the American Association of Collegiate Registrars and Admissions Officers. International students must also provide proof that they can support themselves financially for the duration of the program.

Non-native English speakers will provide evidence of proficiency in English by one of the following:

- A Test of English as a Foreign Language minimum composite score of 100 for the Internet-based test or 600 for the paper-based score
- An International English Language Testing Systems minimum score of 6.5 on the academic exam
- A passing score on the VCU English Language Program compression test

The curriculum will prepare students to work with data from a variety of disciplines and perform appropriate procedures to best analyze the data. The curriculum focuses on the assumptions associated with applied statistics procedures and how to verify the assumptions, and it emphasizes appropriate statistical software packages for data analysis and the current workplace technologies for statistical applications.

Curriculum requirements

Course	Title	Hours
STAT 636	Machine Learning Algorithms	3
STAT 641	Applied Data Analysis	3
STAT 642	Design and Analysis of Experiments I	3
STAT 643	Applied Linear Regression	3
Total Hours		12

The minimum total of graduate credit hours required for this certificate is 12.

Graduate program director

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Graduate admissions

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Program website: ssor.vcu.edu (<http://ssor.vcu.edu>)