Build Your Future with Graduate Study in Mathematics or Applied Statistics

Our graduate programs can help you advance your career in education or the corporate sector. If you are a teacher, you will find that our master's program or certificates will broaden your expertise and enhance your career. If you are thinking of pursuing a doctorate, our programs will deepen your knowledge and prepare you for further study.

The Master of Science in Applied Statistics was developed more than 50 years ago to meet the growing need for master's level statisticians in education, industry and government. The new emphasis on teaching statistics in high school highlights this need. This degree remains highly relevant, especially today, and can help you advance your career as a statistician, teacher, systems analyst, actuary or operations research analyst.

Choose Your Course of Study

Master of Arts in Mathematics

The M.A. may be completed on a part- or full-time basis, and is appropriate for those who have completed undergraduate course work in mathematics through multivariate calculus and linear algebra. The degree requires 30 credits, including one required course, two courses in analysis and seven electives.

**Required Course**
- Graduate Math Seminar

**Elective Courses**
- Geometry
- History of Math
- Technology in Teaching of Math
- Topics in the Teaching of Math
- Complex Analysis
- Linear Algebra
- Mathematical Logic
- Numerical Analysis I
- Numerical Analysis II
- Number Theory
- Financial Mathematics
- Dynamical Systems & Chaos
- Operations Research
- Mathematical Modeling
- Real Analysis
- Abstract Algebra
- Topics in Algebra
- Topology I
- Topics in Topology

*Certain courses listed under other graduate programs may serve as Mathematics electives with the consent of the student’s advisor.

Certificate of Graduate Study in the Teaching of Secondary-School Mathematics

This program is designed for individuals who are currently teaching at the secondary-school level. This 15-credit program consists of five graduate courses in geometry, history of mathematics, statistics, technology in the classroom and a special topics course. These courses may also be applied towards the Master of Arts degree in Mathematics.

Post-Master’s Certificate in Mathematics

We offer a Post-Master’s Certificate in Mathematics for individuals who have already earned a master’s degree but wish to continue their graduate study. The program is open to all, but is especially well suited to the needs of middle-school and secondary-school teachers who already have a master’s degree. Choose from the department’s regular course offerings based on your own interests and goals.
Master of Science in Applied Statistics
The Master of Science in Applied Statistics may also be completed on a full-time or part-time basis with courses in both applied and theoretical statistics. The degree requires 30 credits and a comprehensive examination.

Required Courses
• Statistical Methods I & II
• Statistical Theory I & II
• Regression Methods
• Linear Statistical Models

Applied Statistics Electives*
• Multivariate Methods Survival Data Analysis
• Categorical Data Analysis Clinical Trials
• Design of Experiments Nonparametric Statistics
• Statistics Practicum Sampling Methods
• Operations Research Stochastic Processes
• Mathematical Modeling Statistical Programming
• Statistical Quality Control Selected Topics
• Time Series and Forecasting

*Certain courses listed under other graduate programs may serve as Applied Statistics electives with the consent of the student’s advisor.

Graduate Certificate in Applied Statistics
Earn a graduate certificate in Applied Statistics from Villanova University. This 15-credit graduate certificate is designed for students seeking to deepen their statistical knowledge beyond the undergraduate level. In order to receive the Certificate, students must complete five graduate level courses, including Statistical Methods I and II, and maintain a GPA of 3.0 or better. All applicants must have also completed all the undergraduate mathematics courses that are required for the master’s program. These include: Calculus through Multivariable Calculus (typically Calculus III) and Linear Algebra.

Why Choose Villanova?
Advance Your Career: Advance your career in the corporate sector or the field of education with Villanova’s graduate programs in Mathematics or Applied Statistics. Many of our students have furthered their careers as systems analysts, actuaries, or operations research analysts.

Flexibility: Complete a master’s degree, graduate certificate, or just take a course or two for career enhancement.

Small Classes: Enjoy small classes with experienced, engaged faculty.

Convenient Schedule: Courses are offered during the evening to meet the needs of working professionals.

Affordable Graduate Education: Villanova’s graduate programs are competently priced and graduate assistantships are also available.

Special Tuition Rates for Teachers: All primary- and secondary-school teachers receive special reduced tuition rates in liberal arts and science courses.

Quality Education: Villanova has been ranked by U.S. News & World Report as the Best Regional University in the North for nearly two decades.

Graduate Faculty
Charles Ashley, PhD
Applied Mathematics, Mathematical Physics

Paul Bernhardt, PhD
Statistics, Missing and Censored Data

Alice Deanin, PhD
Number Theory, Mathematics Education

Timothy Feeman, PhD
Functional Analysis, Operator Theory

Jesse Frey, PhD
Order Statistics, Nonparametrics

Alan Gluchoff, PhD
Complex Analysis, Functional Theory

Frederick Hartmann, PhD
Complex Function Theory

Kathryn Haymaker, PhD
Coding Theory, Applied Discrete Math

Robert Jantzen, PhD
Mathematical Physics, Cosmology

Amanda Knecht, PhD
Algebraic Geometry

Michael Levitan, PhD
Probability, Statistics

Paul Lupinacci, PhD
Statistics, Design of Experiments

Beth Malmskog, PhD
Number theory, Arithmetic Geometry

Douglas Norton, PhD
Dynamical Systems, Mathematical Modeling

Paul Pasles, PhD
Number Theory, Mathematical Logic

Joseph Pigeon, PhD
Applied Statistics, Design of Experiments

Bruce Pollack-Johnson, PhD
Operations Research

Michael Posner, PhD
Statistics, Educational Research, Observational Studies

David Sprows, PhD
Topology, Mathematics Education

Robert Styer, PhD
Number Theory

Klaus Volpert, PhD
Algebraic Topology, Differential Geometry

Andrew Woldar, PhD
Group Theory, Graph Theory, Algebraic Combinatorics

Yimin Zhang, PhD
Inferential Statistics, Multiple Comparisons

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VILLANOVA UNIVERSITY