

# APPLIED STATISTICS MS



## CAREER OVERVIEW FOR STUDENTS

Statistics is the science of making decisions in the face of uncertainty. Statistical thinking and methods are used over a broad spectrum of industrial, research, educational, business, and government activities. The Kate Gleason College of Engineering at RIT, through the John D. Hromi Center for Quality and Applied Statistics, offers a Master of Science degree in applied statistics that provides state-of-the-art statistical thinking and methods. The college also offers an advanced certificate in statistical quality for students whose primary interest is in the field of quality, as well as an advanced certificate in statistical methods for product and process improvement for students who want a sound education in statistical methods but who wish to finish a program in a shorter time period than that for the MS degree.

### Course Description for Applied Statistics MS:

[http://www.rit.edu/~932www/grad\\_bulletin/colleges/coe/stats.html](http://www.rit.edu/~932www/grad_bulletin/colleges/coe/stats.html)

### Degree(s) Awarded

- Master of Science degree; requires 45 credits.
- Advanced certificate in statistical quality requires 18 credits.
- Advanced certificate in statistical methods for product and process improvement; requires 18 credits.
- BS/MS programs:  
The center has agreements with RIT's departments of Mathematics and Industrial and Systems Engineering to enable students to earn both BS and MS degrees simultaneously (in less time than if pursued separately)

### Enrollment

Approximately 75 students are enrolled in the MS and advanced certificate programs, mostly on a part-time schedule.

### Cooperative Education Component

- Co-op is an option after completing at least one quarter of coursework and obtaining departmental approval.
- Co-op students are able to work 3 or 6 month interval(s).

### Salary Information – Avg/Range

Co-op:	\$21.04	\$13.00 - \$25.00
MS:	\$57,000	\$40,000 - \$74,000

### Equipment & Facilities

The center is home to the Mason E. Wescott Statistics Computer Laboratory. The center's Richard A. Freund Resource Room and graduate student office contain books and journals from both the statistics and quality fields. The Wallace Memorial Library and the Media Resource Center provide access to a wealth of other references vital to professional studies.

The John D. Hromi Center for Quality and Applied Statistics has achieved international recognition for its quality and productivity seminars, custom training programs, consultative expertise, and Master's and advanced certificate programs.

### Student Skills & Capabilities

Design of Experiments  
Multivariate Analysis  
Regression Analysis  
Reliability  
Survey Design and Sampling  
Robust Design  
Nonparametrics  
Probability Modeling  
Quality Management  
Statistical Software Programs  
Statistical Acceptance Control  
Statistical Process Control

## Nature of Work

Statistics is the scientific application of mathematical principles to the collection, analysis, and presentation of numerical data. Statisticians contribute to scientific inquiry by applying their mathematical and statistical knowledge to the design of surveys and experiments; collection, processing, and analysis of data; and interpretation of the results. Statisticians may apply their knowledge of statistical methods to a variety of subject areas, such as biology, economics, engineering, medicine, public health, psychology, marketing, education, and sports. Many economic, social, political, and military decisions cannot be made without the use of statistical techniques, such as the design of experiments to gain Federal approval of a newly manufactured drug.

*(Source: U.S. Bureau of Labor Statistics Occupational Outlook Handbook)*

## Training/Qualifications

Although more employment opportunities are becoming available to individuals with a bachelor's degree in statistics, a master's degree in statistics or mathematics is usually the minimum educational requirement for most statistician jobs. Research and academic positions in institutions of higher education, for example, require at least a master's degree, and usually a Ph.D., in statistics. Beginning positions in industrial research often require a master's degree combined with several years of experience.

*(Source: U.S. Bureau of Labor Statistics O.O.H.)*

## Job Outlook

[Average employment growth](#) is projected. Individuals with a degree in statistics should have opportunities in a variety of fields. Among graduates with a master's degree in statistics, those with a strong background in an allied field, such as finance, biology, engineering, or computer science, should have the best prospects of finding jobs related to their field of study.

*(Source: U.S. Bureau of Labor Statistics O.O.H.)*

## Job Titles

Quality Engineer, Reliability Analyst, Quality Manager, Statistical Consultant

## Significant Points

- Many individuals with degrees in statistics enter jobs that do not have the title statistician.
- An MS degree in statistics or mathematics is the minimum educational requirement for most jobs with this title.
- Job opportunities should remain favorable for individuals with degrees in statistics. *(Source: U.S. Bureau of Labor Statistics O.O.H.)*

## Employment

Statisticians held about 25,000 jobs in 2010. Eighteen percent of these jobs were in the Federal Government, where statisticians were concentrated in the Departments of Commerce, Agriculture, and Health and Human Services. Another 10 percent were found in State and local governments, including State colleges and universities. **Employment change.** Employment of statisticians is projected to grow 14 percent from 2010 to 2020, about as fast as the average for all occupations. The demand for individuals with a background in statistics is projected to grow, although some jobs will be in occupations with titles other than statistician. *(Source: U.S. Bureau of Labor Statistics O.O.H.)*

## Selected Employers of RIT Applied Statistics MS and/or Graduating Students:

Bausch & Lomb, Delphi, Eastman Kodak Company, Genesee Metal Stampings, Harris RF Communications, Johnson & Johnson (Ortho Clinical), Moog, Southco, Welch Allyn, Xerox

## Contact Us:

We appreciate your interest in your career and we will make every effort to help you succeed. Feel free to contact Annette Stewart, the program coordinator who works with the Applied Statistics MS and advanced certificate programs. You can access information about services through our web site at <http://www.rit.edu/co-op/careers>.

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*Unless otherwise noted, information is based upon data collected by RIT Office of Cooperative Education and Career Services.*