Big data is what’s big in business today. With billions of people and countless systems producing massive amounts of data every second, data-driven insights and analytics are facilitating and optimizing intelligent decision-making across industries.

Intended to meet the need for professionals who can harness complex data and convert it into meaningful information, the systems analytics graduate program at Stevens enables students to visualize, manipulate and extract important concepts from systems data, and complement it with traditional systems decision-making.
**By 2018 the United States will experience a shortage of 190,000 skilled data scientists, and 1.5 million managers and analysts capable of reaping actionable insights from the big data deluge... driving the demand for skilled data practitioners in the next decade will be the wide range of economic sectors that will leverage big data analytics, including retail, manufacturing, healthcare and government services.**

- McKinsey Global Institute

**MASTERS OF ENGINEERING**

Evidence-based decision-making is driving the growth of fields of data science and visualization in today’s markets. The Master of Engineering in Systems Analytics equips students with state-of-the-art data visualization and knowledge extraction techniques for the purpose of analyzing trends, assessing risk, discovering patterns, and building decision models that can better develop, maintain and improve complex engineering systems and enterprises.

Taught by renowned faculty who are practitioners and researchers, on graduation, our students are well prepared to work for data-rich environments including science, technology, engineering, financial services, government, education, healthcare, consulting and media/entertainment.

The master’s degree consists of 10 courses; six required core courses, one lab and four electives.

**Required Core Courses**

- **EM 622** Data Analysis and Visualization Techniques for Decision-Making
- **or ES 630** Modeling and Visualization of Complex Systems and Enterprises
- **SYS 660** Decision and Risk Analysis
- **SYS 670** Forecasting and Demand Modeling Systems
- **ES 660** Multi-Agent Socio-Technical Systems
- **SYS 611** Modeling and Simulation or **SYS 681** Dynamic Modeling of Systems and Enterprises
- **FE 582** Foundations of Financial Data Science
- **FE 513** Practical Aspects of Database Design Lab

**CAREERS**

- Data Scientist
- Data Analyst
- Visualization Designer
- Research Analyst
- Data Visualization Software Engineer

**TOP HIRING FIRMS**

- Accenture
- AT&T
- Cisco
- IBM
- Prudential
- UBS

**THE STEVENS SYSTEMS ANALYTICS ADVANTAGE**

**Our Program:** Rigorous hands-on, project- and team-based program supported by the state-of-the-art Center of Complex Systems & Enterprises (CCSE) lab where real data and visualizations are developed and merged

**Our Faculty:** Distinguished, experienced faculty from industry and academia

**Our Location:** Positioned minutes from New York City, the world’s financial hub and home to thousands of tech companies

**Our Industrial Relationships:** Internships and graduate placements at major institutions: Accenture, AT&T, Cisco, IBM and Verizon.
With Big Data being a universal priority in the world today, organizations are constantly collecting and analyzing data sets to extract valuable information and subsequently they require tools that can disseminate the information simply and accurately. Through data exploration and visualization, large amounts of complex information can be communicated clearly via graphic designs. This certificate introduces students to the latest data manipulation, extraction and visualization techniques that can enhance their decision-making and risk-analysis skills. It covers modern techniques in data analysis and visualization, data science and knowledge discovery, informatics and decision-making and risk analysis.

EM 622 Data Analysis and Visualization Techniques for Decision-Making
EM 623 Data Science and Knowledge Discovery in Engineering Management
EM 624 Informatics for EM
SYS 660 Decision and Risk Analysis

FINANCIAL SERVICES ANALYTICS
Developed in collaboration with Accenture, the Financial Services Analytics (FSA) certificate is designed to meet the growing global need for professionals with expertise in data analytics. FSA is the science and technology of creating data-driven insights and analytical decision-making for the financial services industry. These insights increase the effectiveness of business operations, enhance customer relationships, improve product offerings and improve risk analysis and risk management. This certificate will prepare students with an array of statistical learning methods and database skills in order to create end-to-end business decision-making data analytical tools from an enterprise-level systems approach.

Qualified students will have the opportunity to participate in internships with Accenture. Scholarships funded by Accenture will be awarded to two students per year to cover tuition and fees for the certificate.

FE 582 Foundations of Financial Data Science with FE 513 Practical Aspects of Database Design (lab)
FE 590 Introduction to Knowledge Engineering
FE 595 Financial Systems Technology (Analytical Financial Systems Design)
FE 550 Data Visualization Applications
FE 800 Special Projects in Financial Engineering

SYSTEMS AND SUPPORTABILITY ENGINEERING
This four-course cluster presents innovative methods and practices to integrate system reliability, maintainability and supportability considerations into the systems engineering process. On the other hand, methods to optimize necessary logistics resources and processes are critical and also studied in this sequence of courses. Current business trends are discussed and assessed.

625 Fundamentals of Systems Engineering
640 System Supportability and Logistic
645 Design for System Reliability, Maintainability
650 System Architecture and Design

Full course listings for graduate certificates can be found at stevens.edu/sse/graduate-certificates. A faculty advisor must approve all other graduate certificate options for the Systems Analytics program.
RELEVANT CURRICULUM

Stevens’ graduate courses are designed with a theory and implementation perspective. Utilizing an Open Academic Model, the School of Systems and Enterprises (SSE) leverages global partnerships with industry and government to provide a highly relevant and engaged curriculum tailored to the real world and the skill competency needs of practitioners.

UNIQUELY QUALIFIED FACULTY

Stevens Institute of Technology brings together institute-wide faculty who are industry experts and practitioners, researchers and academics, with students who are committed to learning in a dynamic, diverse and engaged community. Stevens faculty possess a wealth of industry and government experience, and expertise across diverse domains, including aerospace, healthcare, security, telecommunications, finance and defense.

FLEXIBLE DELIVERY OPTIONS

Stevens Institute of Technology delivers its courses in convenient, flexible delivery formats including:

- Traditional semester courses held one evening a week for 15 weeks, on-campus at Stevens in Hoboken, NJ
- Online via our award-winning Stevens WebCampus
- On-site at industry locations worldwide

ADMISSION REQUIREMENTS

Applicants may apply online at stevens.edu/applications

- Completed application for admission
- $60 non-refundable fee
- An undergraduate degree with a “B” average or better from an accredited college or university. Undergraduates with a strong background in mathematics, probability and statistics are encouraged to apply
- Official transcripts from all institutions attended
- Two letters of recommendation
- GRE /GMAT scores (Part-time students do not require GRE/GMAT scores)