
The Stevens Master of Engineering in Engineering Management program prepares students to become decision makers able to engineer solutions to complex problems. Stevens has a proud history of leading innovation in engineering, science and technology. One of the first universities in the world to offer an engineering management program, today, Stevens continues to advance the discipline for the 21st century. Our unique program provides an interdisciplinary blend of courses in systems engineering, financial engineering, and enterprise systems. Students develop the engineering management skills necessary to lead teams and projects that deliver high quality and cost efficient solutions to technically complex system, product and process problems.
GRADUATE CERTIFICATES

(Four-courses, 12 credits) All courses taken as part of a Graduate Certificate can be applied toward a Master’s Degree.

Financial Engineering

The components of financial problem solving are embedded in the methods of applied mathematics, computational techniques, statistical analysis and economic theory. This four-course certificate focuses on directing these components towards solving problems in securities valuation, risk management, portfolio structuring and regulatory concerns with emphasis on tools and training in stochastic modeling, optimization, and simulation techniques.

FE 610 Stochastic Calculus for Financial Engineers
FE 620 Pricing and Hedging
FE 621 Computational Methods in Finance
FE 630 Portfolio Theory and Applications

Financial Risk Engineering

The recent turbulence in the financial system heightened the need for a much stronger understanding of the financial system, its environment and the risk measures applied in the industry to quantify risk it in its multiple hierarchies. This certificate enables the graduate to fill this need and play an important role in balancing the interests of shareholders with the appropriate levels of risk taken by the managers and decision makers.

FE 535 Introduction to Risk Management
FE 635 Financial Enterprise Risk Engineering
FE 610 Stochastic Calculus for Financial Engineers
FE 655 Systemic Risk and Financial Regulation

Systems Engineering & Architecting

The topics covered and material presented in this certificate provides an interdisciplinary approach based on an "entire view" of missions and operational environments and combines the capabilities of platforms, systems, operators, and support to fashion solutions that meet customer needs.

SYS 625 Fundamentals of Systems Engineering
SYS 650 System Architecture and Design
EM 612 Project Management of Complex Systems
SYS 605 Systems Integration

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 are also studied in this sequence of courses. Current business trends are discussed and assessed.

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

Full course listings for graduate certificates can be found at stevens.edu/SSE. All other graduate certificate options for the Engineering Management program must be approved by a faculty advisor.

INTENDED AUDIENCE

Designed for the engineer and technical manager who needs a broader education to keep an organization operating efficiently and working ahead of its competitors, the Engineering Management program prepares engineers to work effectively at the interface between engineering and management and assume professional positions of increasing responsibility across a broad range of industries, such as: healthcare, technology, finance, business and software systems.
MASTER’S PROGRAM

The Master’s Degree in Engineering Management strives to develop students with the engineer management skills necessary to lead teams and projects that deliver high quality and cost efficient solutions to technically complex system, product and process problems.

MASTER OF ENGINEERING IN ENGINEERING MANAGEMENT

The Masters Degree in Engineering Management requires 10 courses (equivalent to 30 credits); six-core required courses and four-elective courses.

REQUIRED CORE COURSES

*The Masters Degree in Engineering Management requires the following core courses:

<table>
<thead>
<tr>
<th>Core Course</th>
<th>Elective Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM 600 Engineering Economics and Cost Analysis</td>
<td>EM 612 Project Management of Complex Systems</td>
</tr>
<tr>
<td>or EM 620 Engineering Cost Management</td>
<td>SYS 625 Fundamentals of Systems Engineering</td>
</tr>
<tr>
<td>EM 605 Elements of Operations Research</td>
<td>EM 680 Designing and Managing the Development Enterprise</td>
</tr>
<tr>
<td>SYS 611 Modeling and Simulation</td>
<td></td>
</tr>
<tr>
<td>or SYS 681 Dynamic Modeling of Systems and Enterprise</td>
<td></td>
</tr>
</tbody>
</table>

*Students lacking a strong quantitative background that includes an introduction to calculus and statistics may be required to take several ramp courses as defined by the admission conditions listed in the acceptance letter.

DOCTORAL DEGREE

Doctoral Degree in Engineering Management

(60 credits, post Master’s and minimum 30 research credits)

The program leading to the Doctor of Philosophy (Ph.D.) degree is designed to develop your ability to perform research or high-level design in Engineering Management. Admission to the doctoral program is made through the SSE Graduate Admissions Committee, based on review of the candidate’s scholastic record. A master’s degree is generally required before a student is admitted to the doctoral program. Master’s level academic performance must reflect the candidate’s ability to pursue advanced studies and perform independent research. Generally a GPA of 3.5 in a master’s program is required.

Recent studies show that most engineers will ultimately assume managerial positions, and that most will spend a considerable part of their professional careers in a management or supervisory capacity. In a recent survey conducted by the American Association of Engineering Societies, it was found that within ten years of the start of their careers, more than 50 percent of engineers find themselves in technical management positions, often without the benefit of formal training in management.
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 Stevens WebCampus
- On-site at industry and government sponsor locations worldwide

STEVENS ADMISSION REQUIREMENTS

- Completed application for admission
- An undergraduate degree in engineering or in computer science or in a related discipline, with a “B” average or better from an accredited college or university
- Official college transcripts
- Two letters of recommendation forms

Application materials should be sent or faxed to the attention of the Office of Graduate Admissions, Castle Point on Hudson, Hoboken, NJ. Fax number 201.216.8044.

CONTACT
Dr. Jose Emmanuel Ramirez-Marquez
Professor & Program Director, Engineering Management
Email: jmarquez@stevens.edu

STEVENS INSTITUTE OF TECHNOLOGY
School of Systems & Enterprises
Castle Point on Hudson
Hoboken, NJ 07030
Email: sse.assist@stevens.edu

Washington DC Location:
Stevens Institute of Technology
Ronald Reagan Building & International Trade Center
Woodrow Wilson Plaza
1300 Pennsylvania Ave., NW, Suite G-17
Washington, DC 20004
Email: washingtondc@stevens.edu

stevens.edu/EM