In a world where systems continue to grow more complex and interconnected, and profitability, capability, agility, resilience and cost-effectiveness are the key business drivers, there is an increasing demand for technical leaders who can navigate and manage complex systems and enterprises.

At Stevens, our graduate program in systems engineering teaches the interdisciplinary skills and approaches needed to conceive, architect, design and manage complex technical systems and process throughout their life cycles. Our robust education builds upon existing technical and engineering foundations, and work experiences, with management and systems and software engineering, among other disciplines.
MASTER OF ENGINEERING

The Master of Engineering in Systems Engineering provides the right blend of technical and management training to prepare systems engineers for positions of increasing responsibility. Upon graduation our students are exceptionally well prepared to apply systems thinking at the system, system of system and enterprise levels to enable the successful conception of systems and their support throughout their life-cycle. Graduates can work effectively at the interface between engineering and management in areas including healthcare, technology, business, finance, manufacturing and defense.

The master’s degree requires 10 courses (equivalent to 30 credits); five core required courses and five-elective courses.

Required Core Courses

The master’s degree requires the following core courses:

- SYS 625 Fundamentals of Systems Engineering
- SYS 650 System Architecture and Design
- SYS 605 Systems Integration
- EM 612 Project Management of Complex Systems
- SYS 800 Special Problems in Systems Engineering

Elective Courses*

The master’s degree includes five elective courses, including one quantitative course: Choose four from the following:

- SYS 640 System Supportability and Logistics
- SYS 655 Robust System Design
- ES 684 Systems Thinking
- EM 665 Integrated Supply Chain Management
- SYS 681 Dynamic Modeling of Systems and Enterprise
- SYS 750 Advanced System and Software Architecture Modeling & Assessment
- SYS 801 Special Problems in Systems Engineering

Choose one quantitative course from the following:

- SYS 611 Modeling & Simulation
- SYS 645 Design for System Reliability, Maintainability & Supportability
- SYS 660 Decision & Risk Analysis

*Additional electives are also available to students. Selection of electives must be approved and coordinated with a faculty advisor.

DOCTORAL DEGREE

The Doctor of Philosophy (Ph.D.) degree consists of 54 credits, post master’s with a minimum of 15 research credits. The curriculum for the doctoral program is designed to develop the ability of the student to perform high-impact research and high-level design that will contribute significantly in the advancement and growth of the field of systems engineering. For more details on the doctoral program and requirements, visit stevens.edu/sse/doctoral-studies.
GRADUATE CERTIFICATES (4 course, 12 credits)

All courses taken as part of a graduate certificate can be applied toward a master’s degree.

Full course listings for graduate certificates can be found at stevens.edu/sse/graduate-certificates.

SYSTEMS ENGINEERING

Core Requirements:
SYS 625 Fundamentals of Systems Engineering
SYS 650 System Architecture and Design

Electives: Select two courses from the following list:
SYS 605 Systems Integration
EM 612 Project Management of Complex Systems
SYS 750 Advanced System and Software Architecture Modeling and Assessment
A maximum of one from the following:
SYS 645 Design for System Reliability, Maintainability and Supportability
SYS 660 Decision and Risk Analysis or
SYS 611 Modeling and Simulation

SPACE SYSTEMS ENGINEERING

SYS 625 Fundamentals of Systems Engineering
SYS 650 System Architecture and Design
SYS 632 Designing Space Missions and Systems or SYS 635 Human Spaceflight
SYS 633 Mission and Systems Design Verification and Validation or SYS 605 Systems Integration

SYSTEMS SECURITY ENGINEERING

Select four of the following five courses:
SES 602 Secure Systems Foundations
SES 622 Fundamentals of Systems Engineering Security
SES 623 Systems Security Architecture and Design
SYS 660 Decision and Risk Analysis
SSW 689 Engineering of Trusted Software Systems

SYSTEMS SUPPORTABILITY ENGINEERING

Core Requirements:
SYS 640 System Supportability and Logistics
SYS 645 Design for System Reliability, Maintainability, and Supportability

Electives: Select two courses from the following list:
SYS 625 Fundamentals of Systems Engineering
SYS 650 System Architecture and Design
ES 684 Systems Thinking
EM 680 Designing and Managing the Development Enterprise
RELEVANT CURRICULUM

Stevens graduate courses are designed to solve real problems supported by a robust theoretical foundation. 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.

Model Based Systems Engineering (MBSE) Focus - Over the past decade the systems engineering discipline has been moving from a PowerPoint mentality to a model-based discipline. At SSE, the curriculum has been model centric from its inception and students use model-based systems and software tools throughout the core curriculum.

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 and government sponsor locations worldwide

ADMISSION REQUIREMENTS

Applicants may apply online at stevens.edu/applications

- Completed application for admission
- $60 non-refundable application fee
- An undergraduate degree in engineering, computer science or in a related discipline, with a “B” average or better from an accredited college or university
- Official transcripts from all institutions attended
- Two letters of recommendation
- GRE /GMAT scores (Not required for part-time students)