In today's space community, change is the only constant. There is growing demand for professionals who can develop management and engineering solutions for today's complex space systems challenges. Our space engineering master's degree program prepares students to work effectively at the space project level, ensure delivery of space projects and leverage a value-added systems-engineering approach to problem solving.

Graduates develop analytical and technical competencies, as well as the managerial skills needed to impact areas such as space and mission systems design, engineering, verification, validation and integration, providing them with the edge they need to excel in the dynamic space industry.
MASTER OF ENGINEERING IN SPACE SYSTEMS ENGINEERING

Knowledgeable professionals in government and industry are needed to design cutting edge space missions, systems and solutions to help solve the unique challenges faced by today’s increasingly evolving space community. Stevens offers a master’s degree in space systems engineering to equip graduates with technical knowledge, hands-on experience and a holistic understanding of systems engineering principles, tools and processes.

The master’s degree requires ten courses (equivalent to 30 credits): six core courses, three electives and a project or thesis.

Required Core Courses
(and capstone project or thesis)

SYS 625 Systems Engineering Fundamentals
SYS 611 Systems Modeling & Simulation
or SYS 660 Decision and Risk Analysis
EM 612 Project Management of Complex Systems
SYS 632 Designing Space Missions and Systems
or SYS 635 Human Spaceflight
SYS 633 Mission and System Design Verification and Validation
or SYS 605 Systems Integration
SYS 637 Cost-Effective Space Mission Operations
SYS 800 Master’s Project
or SYS 900 Thesis in Systems Engineering

Elective Courses
The master’s degree includes a total of three electives, including the following. Additional electives are available. All electives must be approved and coordinated with a faculty advisor.

SYS 635 Human Spaceflight
SYS 636 Space Launch and Transportation Systems
SYS 637 Cost-Effective Space Mission Operations
SYS 638 Crew Exploration and Vehicle Design Exercise
SYS 645 Design for System Reliability, Maintainability and Supportability

“The coursework at Stevens equipped me to be a technical leader and to be a part of the next phase in space - developing space hardware for the sake of exploration.”

Ronald Cobbs
Avionics Chief Engineer, NASA
M.S. in space systems engineering
GRADUATE CERTIFICATES (four courses, 12 credits)

For practitioners interested in improving their skills and technical competencies, and for students considering new career paths, Stevens offers graduate certificates. 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

SPACE SYSTEMS ENGINEERING

Space systems engineers with a holistic systems engineering and architecture perspective are able to integrate crucial activities spanning the entire life cycle. This program provides the backbone for space systems engineers to effectively contribute to space system and mission design with a focus on: operations, concept development, space system architecture, verification and validation, key system engineering processes and tools.

SYS 625 Fundamentals of Systems Engineering
SYS 650 System Architecture and Design
SYS 632 Designing Space Missions and Systems
or SYS 635 Human Spaceflight

SYSTEMS ENGINEERING

Meeting customer needs requires systems engineers to leverage an interdisciplinary approach based on an “entire view” of missions and operational environments. This program prepares professionals with the capabilities of platforms, systems, operators and support to develop solutions paramount to an evolving industry.

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
SYS 633 Mission and System Design
Verification and Validation
or SYS 605 Systems Integration
SYS 645 Design for System Reliability, Maintainability and Supportability
or SYS 660 Decision and Risk Analysis
or SYS 611 Systems Modeling and Simulation
RELEVANT CURRICULUM

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

Over the past decade the systems engineering discipline has been moving from a PowerPoint mentality to a model-based systems engineering focus. 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 score (Not required for part-time students)