



**STEVENS**  
INSTITUTE of TECHNOLOGY

**School of Systems  
& Enterprises**

MASTER OF ENGINEERING  
GRADUATE CERTIFICATES

PROGRAMS AVAILABLE: ON CAMPUS | ONLINE | CORPORATE



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.

# SPACE SYSTEMS ENGINEERING

*Space Systems Engineers  
Aerospace Systems Designers  
Avionics Engineering Managers*



[STEVENS.EDU/Space](https://www.stevens.edu/space)



# 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 633** Mission and System Design Verification and Validation

**SYS 611** Systems Modeling & Simulation

or **SYS 605** Systems Integration

or **SYS 660** Decision and Risk Analysis

**EM 612** Project Management of Complex Systems

**SYS 637** Cost-Effective Space Mission Operations

**SYS 632** Designing Space Missions and Systems

**SYS 800** Master's Project

or **SYS 635** Human Spaceflight

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 638** Crew Exploration and Vehicle Design Exercise

**SYS 636** Space Launch and Transportation Systems

**SYS 645** Design for System Reliability,

**SYS 637** Cost-Effective Space Mission Operations

Maintainability and Supportability

## CAREERS ▶

- Space Systems Engineering
- Aerospace Engineering
- Avionics Engineering
- Satellite Systems Engineering
- Flight Dynamics Engineering

## TOP HIRING FIRMS ▶

- Boeing
- FAA
- General Dynamics
- Honeywell
- Lockheed Martin
- Mitre
- NASA
- Northrop Grumman
- United Technologies

***“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](https://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 633** Mission and System Design

**SYS 650** System Architecture and Design

Verification and Validation

**SYS 632** Designing Space Missions and Systems

or **SYS 605** Systems Integration

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

**SYS 645** Design for System Reliability,

**EM 612** Project Management of Complex Systems

Maintainability and Supportability

**SYS 750** Advanced System and Software Architecture

or **SYS 660** Decision and Risk Analysis

Modeling and Assessment

or **SYS 611** Systems Modeling and Simulation

## WORLD-CLASS SPACE SYSTEMS ENGINEERING EDUCATION

Stevens Institute of Technology is a recognized provider of space systems engineering education to NASA employees and space industry professionals worldwide. Taught in partnership with Teaching Science and Technology, Inc., Stevens' School of Systems and Enterprises (SSE) offers a high-caliber graduate education that equips professionals with the tools needed to become technical leaders within the aerospace industry.



## 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](https://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)



### CONTACT

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### SCHOOL OF SYSTEMS AND ENTERPRISES

GRADUATE STUDIES

BABBIO CENTER | 5TH FLOOR

1 CASTLE POINT TERRACE

HOBOKEN, NEW JERSEY 07030

EMAIL: [SSE.ASSIST@STEVENS.EDU](mailto:SSE.ASSIST@STEVENS.EDU)



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CODE: 071119t

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