



# SOFTWARE ENGINEERING

*Agile Thinker  
Innovative Designer  
21st Century Builder*

The 21st century is all about software. From our phones, to our cars, to our search engines, software is the building material of choice in today's computer-centric world.

At Stevens, our graduate program in software engineering combines the fundamentals of computing, design and engineering to give our students the foundation to envision, design and build the software systems of the future.



[STEVENS.EDU/Software](http://STEVENS.EDU/Software)



# MASTER OF SCIENCE

With businesses and institutions rapidly integrating new technologies, there is an enormous demand for software engineers who are cognizant of the latest techniques in computing and are armed with the skillset to construct reliable, responsive, safe and secure software systems.

The Master of Science in software engineering provides students with a strong foundation in all aspects of software creation, from envisioning new products, through design and build, testing and maintenance, and overall project management. Because technology keeps changing, students learn how to select and adopt new technology, in order to stay current and relevant in their professional careers. Our program offers rigorous hands-on, project- and team-based program that exceeds the IEEE/ACM software engineering curriculum standards.

Our graduates are exceptionally well prepared for careers of increasing responsibility across a broad range of companies.

The master's degree requires ten courses (30 credits): seven required core courses and three electives. Electives must be approved by an advisor and can be chosen from the software engineering, engineering management and computer science areas.

## Required Core Courses

**SSW 540** Fundamentals of Software Engineering

**SSW 555** Agile Methods for Software Development

**SSW 564** Software Requirements Analysis and Engineering

**SSW 565** Software Architecture and Component-Based Design

**SSW 567** Software Testing, Quality Assurance, and Maintenance

**SSW 533** Software Estimation and Metrics

**SSW 695** Software Engineering Studio (Capstone)

*“Getting a master's degree from Stevens has been an outstanding investment towards my career as a software engineer in IT services. The program's theoretical and practical structure has helped me better understand concepts involved in managing software projects and products end-to-end. The faculty's industry understanding and academic knowledge provided a real-time, up-to-date learning experience.”*

**Adam Platt, alumnus**  
**M.S. in software engineering**

*“Employment of software developers is projected to grow 24 percent from 2016 to 2026, much faster than the average for all occupations.”*

*— U.S. Bureau of Labor Statistics*

## CAREERS ▶

- Software Developer
- Systems/Software Architect
- Requirements Engineer
- Software Applications Engineer
- Application Developer
- Testing Engineer
- Project Manager
- Software Engineer

## TOP HIRING FIRMS ▶

- Amazon
- Accenture
- BlackRock
- Boxed
- Cisco
- L3Harris
- Morgan Stanley
- United Technologies
- UPS

# GRADUATE CERTIFICATES (four courses, 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](http://stevens.edu/sse/graduate-certificates).

## SOFTWARE DESIGN AND DEVELOPMENT



**SSW 555** Agile Methods for Software Development

**SSW 565** Software Architecture and Component-Based Design

**CS 574** Object-Oriented Design and Analysis

**CS 546** Web Programming

or **CS 548** Engineering of Enterprise Software Systems

## SOFTWARE SYSTEMS ARCHITECTURE

**SSW 540** Fundamentals of Software Engineering

**SYS 650** System Architecture and Design

**SSW 565** Software Architecture and Component-Based Design

**SYS 750** Advanced System & Software Architecture

## SOFTWARE ENGINEERING



### Core Requirements:

**SSW 540** Fundamentals of Quantitative Software Engineering

**SSW 533** Software Estimation and Measurement

### Electives: (Choose two)

**SSW 565** Software Architecture and Component-Based Design

**SSW 567** Software Testing, Quality Assurance, and Maintenance

**SSW 590** DevOps Principles and Practice

or choose any other software engineering course (SSW); or **CS 501**,

**CS 546**, or **EM 612**.

```
mirror_ob.select= 1
modifier_ob.select=1
bpy.context.scene.objects.active = modifier_ob
print("Selected" + str(modifier_ob)) # modifier ob is the active ob
#mirror_ob.select = 0
```

## INTENDED AUDIENCE ▶



### No Formal Computing Background?

There have always been different pathways to careers in computing. Some of the best programmers have been music majors or philosophy majors, or, like Steve Jobs, calligraphy students. All you need are good GRE scores and quantitative skills. You may need to take some programming ramp courses and possibly a summer bridge.

### Already Have a Computer Science Degree or Working in the Industry?

The master's program is designed to accelerate your career and enable you to take on increasing leadership and management responsibilities. You'll get the chance to envision, design and build systems that are better, faster and cheaper. The program will prepare you to be among the leading architects and project managers of 21st century software systems.

### Interested in Cybersecurity?

Security is one of the top concerns in our software systems today. Security can never be "added on" a system. It must be designed and built in from the beginning. Our program is one of the first to implement the Department of Homeland Security's Master's of Software Assurance curriculum recommendations, and we did it by incorporating it into our core courses. For those students who wish to specialize in security and trusted systems, we offer in-depth electives\* and concentrations.

*\*Selection of electives must be approved and coordinated with a faculty advisor.*

## RELEVANT CURRICULUM

Stevens graduate courses are designed by researchers and practitioners for practitioners. The School of Systems and Enterprises (SSE) leverages global partnerships with industry and government to provide highly relevant and engaging curriculum tailored to the real-world education and skill competency needs of practitioners.

## UNIQUELY QUALIFIED FACULTY

Stevens 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, information technology, 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 per week for 15 weeks
- 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 fee
- An undergraduate degree with a “B” average or better from an accredited college or university
- Official transcripts from all institutions attended
- Two letters of recommendation
- GRE score for full-time students and for students without an undergraduate degree in engineering or computer science.



**School of Systems  
& Enterprises**



### CONTACT

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SOFTWARE ENGINEERING  
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### SCHOOL OF SYSTEMS AND ENTERPRISES

GRADUATE STUDIES

BABBIO CENTER | 5TH FLOOR

1 CASTLE POINT TERRACE

HOBOKEN, NEW JERSEY 07030

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[STEVENS.EDU/SSE](https://stevens.edu/sse)

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