

SOFTWARE DEVELOPMENT & ENGINEERING, MS

Campus: NYC, Online

This program is one of the very few graduate programs in Software Development and Engineering in the entire New York City area, and it can be completed on campus or online. This advanced program provides you with the opportunity to focus on the application of engineering principles to the development process and is distinguished by a rigorous, in-depth study of the problems of managing, designing, developing, delivering, and maintaining large software systems.

Students completing the MS in Software Development and Engineering program will be prepared to sit for the exam leading to the Certified Software Development Associate (CSDA) credential developed by the Computing Society of the IEEE, the world's leading organization of computing professionals. Students who successfully pass this exam will enter the field, or continue their careers, with both an impressive degree and a highly coveted certification; a powerful combination for professional advancement.

All incoming students are required to have an undergraduate or graduate degree in computer science or related experience.

Any student lacking knowledge of the object-oriented paradigm and fundamentals of software engineering will be required to take SE 602 Fundamental Computer Science I with Java and SE 616 Introduction to Software Engineering as preparatory courses. Credits taken for the preparatory courses do not count toward the degree. However, the grades earned are computed into the student's GPA.

Code	Title	Credits
Preparatory Courses		
SE 602	Fundamental Computer Science I with Java	(4)
SE 616	Introduction to Software Engineering	(4)
Core Requirements (12 Credits)		12
SE 673	Software Design Methodologies	
SE 675	Requirements Engineering	
SE 677	Software Reliability & Quality Assurance	
SE 679	Contemporary Software Engineering Theory and Practice	
Electives (12 Credits)¹		12
Students may choose individual courses from the MS/SDE curriculum catalog and their current academic schedule to fulfill elective credits. Students should consult with their Academic Advisor or Program Director when selecting courses.		
<i>Software Engineering Electives</i>		
SE 700	Independent Study in Software Engineering	
SE 725	Component Architectures for Enterprise Application Development	
SE 741	Formal Software Development	
SE 751	Software Validation & Verification Techniques	
SE 765	Distributed Software Development	
SE 770	Software Risk Management	
<i>Other Electives</i>		
IS 637	Information Systems Project and Change Management	
IS 639	Information Systems Planning and Policy	
CS 639	Mobile Application Development	
CS 653	Cryptography and Computer Security	
IT 660	Network Security	
IT 662	Web and Internet Security	
Capstone Options (6 Credits)		6
<i>Option 1¹</i>		
SE 785	Software Engineering Studio	
<i>Option 2</i>		
SE 701	Software Development Thesis I	
SE 702	Software Development Thesis II	
Total Credits		30

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¹ Students who select *Option 1* for their Capstone Option must take an additional 3-credit elective course. In such instances, students are taking a total of 15 elective credits.