MS in Computer Science
Curriculum Check Sheet

***30.0-credit degree program* – Below is a breakdown of how MS CS students must complete their degree requirements.**

REQUIRED (Must Complete 1 course)

CS-GY 6033 – Design and Analysis of Algorithms I	
CS-GY 6043 - Design and Analysis of Algorithms II	

CORE COURSES (Must Complete 4 courses)

B average is required across the Algorithms and Core Courses.

CS-GY 6063 – Software Engineering I	
CS-GY 6083 – Principles of Database Systems	
CS-GY 6133 – Computer Architecture I	
CS-GY 6233 – Introduction to Operating Sys	
CS-GY 6313 – Information Visualization	
CS-GY 6373 – Programming Languages	
CS-GY 6513 – Big Data	
CS-GY 6533 – Interactive Computer Graphics	
CS-GY 6613 – Artificial Intelligence I	
CS-GY 6643 – Computer Vision	
CS-GY 6763 – Algorithmic ML & Data Sci	
CS-GY 6813 – Information, Security, and Privacy	
CS-GY 6843 – Computer Networking	
CS-GY 6923 – Machine Learning	

CAPSTONE (Must Complete 1 course)

Must earn a grade of B or better in the course.

CS-GY 6053 – Foundations of Data Science	
CS-GY 6063 – Software Engineering I	
CS-GY 6413 – Compiler Design and Construction	
CS-GY 6513 – Big Data	
CS-GY 6533 – Interactive Computer Graphics	
CS-GY 6573 – Penetration Testing and Vulnerability Analysis	
CS-GY 6613 – Artificial Intelligence I	
CS-GY 6643 – Computer Vision	
CS-GY 6823 – Network Security	
CS-GY 6943 – AI for Games	
CS-GY 9163 – Application Security	
CS-GY 9223 – Distributed Systems	

ELECTIVES (Must Complete 4 courses)

CS-GY 6003 – Foundations of Computer Science	
CS-GY 6033 – Design and Analysis of Algorithms I	
CS-GY 6043 – Design and Analysis of Algorithms II	
CS-GY 6053 – Foundations of Data Science	
CS-GY 6063 – Software Engineering I	
CS-GY 6083 – Principles of Database Systems	
CS-GY 6133 – Computer Architecture I	
CS-GY 6233 – Introduction to Operating Systems	
CS-GY 6313 – Information Visualization	
CS-GY 6373 – Programming Languages	
CS-GY 6413 – Compiler Design and Construction	
CS-GY 6513 – Big Data	
CS-GY 6533 – Interactive Computer Graphics	
CS-GY 6543 – Human Computer Interaction	
CS-GY 6553 – Game Design	
CS-GY 6573 – Penetration Testing and Vulnerability	
CS-GY 6613 – Artificial Intelligence I	
CS-GY 6643 – Computer Vision	
CS-GY 6703 – Computational Geometry	
CS-GY 6753 – Theory of Computation	
CS-GY 6763 – Algorithmic ML & Data Science	
CS-GY 6803 – Info Systems Security Eng. & Mgmt.	
CS-GY 6813 – Information, Security, and Privacy	
CS-GY 6823 – Network Security	
CS-GY 6843 – Computer Networking	
CS-GY 6903 – Applied Cryptography	
CS-GY 6913 – Web Search Engines	
CS-GY 6923 – Machine Learning	
CS-GY 6943 – AI for Games	
CS-GY 6953 – Deep Learning	
CS-GY 6963 – Digital Forensics	
CS-GY 9053 – Special Topics: Intro to Java	
CS-GY 9163 – Application Security	
CS-GY 9223 – Selected Topics (varies each semester)	
CS-GY 9963 – Advanced Research Project	
CS-GY 997X – MS Thesis*	

*MS thesis is a two-semester long course, worth a total of 6 credits.

ELECTIVES OUTSIDE DEPARTMENT (max. 6 credits) (OPTIONAL)

*Electives Outside Department must relate to CS degree.
** Internship for MS (CP-GY) is a 1.5 credit course (required for CPT) and is considered outside of the department.
*** Students often take the other 1.5 credits in MOT or FRE department or from NYU Stern.

Note: Not all courses are offered every semester. Please refer to the course catalog in Albert for most updated selection.

To graduate with MS in Computer Science, students must fulfill the 30-credit requirement with a cumulative GPA of at least 3.0, as well as the specific detailed requirements above.

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