### 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 Systems
- 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 Science
- CS-GY 6813 – Information, Security, and Privacy
- CS-GY 6843 – Computer Networking
- CS-GY 6923 – Machine Learning

#### CAPSTONE (Must Complete 1 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 Analysis
- 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 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)
- 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 Analysis
- 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 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*

*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.