MSCS DEGREE REQUIREMENTS FORM (before Fall 2024) *last revised (09/25/2025)*

First Name: _____ Last Name:_____ N number:_____ NYU Email:_____

Required: 36 credits of approved coursework

- **21** credits - standard graduate CS classroom-based courses.

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

- **6** credits - standard graduate CS, Math and Data Science classroom-based courses; independent study; MS thesis (no external internships) Independent study and master's thesis require DGS approval (MS Thesis fulfills the Capstone requirement, see page 2 under Requirement C).

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

- Remaining **9** credits in any of above or: credits transferred from graduate study in CS; external internship; and relevant graduate courses. At most 6 credits of external internship. Relevant graduate courses and external internships require DGS approval.

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

Requirement A: A student must take the three foundational courses and maintain a GPA of 2.667 or better in the courses:

CSCI-GA 1170-001 Fundamental Algorithms Semester_____ Grade_____ Credits: ___ Notes ___

CSCI-GA 2110-001 Programming Languages Semester_____ Grade_____ Credits: ___ Notes ___

CSCI-GA 2250-001 Operating Systems Semester_____ Grade_____ Credits: ___ Notes ___

Requirement B: A student must pass **ONE** course in **TWO** of the following four designated application areas

Course _____ Semester_____ Grade_____ Credits: ____

Course _____ Semester_____ Grade_____ Credits: ____

Requirement C: A student must complete a designated capstone course with the grade of B (3.0) or better (see page 2 for the list). Alternatively, subject to requirements and prior approval of the DGS, a student may complete a master's thesis or a capstone advanced lab.

Course _____ Semester_____ Grade_____ Credits: ____

Graphics

CSCI-GA.2270 Computer Graphics
CSCI-GA.2271 Computer Vision
CSCI-GA.2274 Advanced Computer Graphics
CSCI-GA.3033 Advanced Computer Vision
CSCI-GA.3033 Computational Geometry
CSCI-GA.3033 Computer Vision for Science & Engineering
CSCI-GA.3033 Geometric Modeling
CSCI-GA.3033 Graphics Processing Units (GPUs): Architecture & Programming
CSCI-GA.3033 Integrating Machine Learning to Computer Vision
CSCI-GA.3033 Introduction to Computer Vision
CSCI-GA.3033 Learning with Large Language & Vision Models
CSCI-GA.3033 Social Multiplayer Games
CSCI-GA.3033 Virtual Reality
CSCI-GA.3033 Vision Meets Machine Learning

Computation for Science and Society

CSCI-GA.2112 Scientific Computing
CSCI-GA.2180 Financial Software Projects
CSCI-GA.2420 Numerical Methods I
CSCI-GA.2421 Numerical Methods II
CSCI-GA.2520 Bioinformatics & Genomes
CSCI-GA.2585 Speech Recognition
CSCI-GA.2730 Linear Programming
CSCI-GA.2750 Nonlinear Optimization
CSCI-GA.2945 Convex & Nonsmooth Optimization
CSCI-GA.2945 High Performance Computing
CSCI-GA.2945 Immersed Boundary Method
CSCI-GA.2945 Monte Carlo Methods
CSCI-GA.2945 Numerical Optimization
CSCI-GA.2945 Stochastic Modeling & Uncertainty & Quantification in Complex Systems
CSCI-GA.2945 Topics in Numerical Analysis
CSCI-GA.3033 Blockchain & Its Applications
CSCI-GA.3033 Cryptocurrencies & Decentralized Ledgers
CSCI-GA.3033 Data Analytics & Visualization in Healthcare
CSCI-GA.3033 Data Science for Health
CSCI-GA.3033 Encrypted Computation
CSCI-GA.3033 Introduction to Agent-Based Modeling
CSCI-GA.3033 Machine Learning for Healthcare
CSCI-GA.3033 Music Software Projects
CSCI-GA.3033 Practical Computer Security
CSCI-GA.3033 Public Interest Technology
CSCI-GA.3033 Quantum Computation
CSCI-GA.3033 Randomized Numerical Linear Algebra
CSCI-GA.3033 Security & Privacy
CSCI-GA.3033 Social Networks
CSCI-GA.3033 Technologies for Finance
CSCI-GA.3033 Topics in Digital Media
CSCI-GA.3205 Applied Cryptography & Network Security
CSCI-GA.3210 Introduction to Cryptography
CSCI-GA.3700 Values Embodied in Information & Communications Technology
DS-GA.1017 Responsible Data Science

Intelligent Systems

CSCI-GA.2271 Computer Vision
CSCI-GA.2390 Logic in Computer Science
CSCI-GA.2560 Artificial Intelligence
CSCI-GA.2565 Machine Learning
CSCI-GA.2566 Foundations of Machine Learning
CSCI-GA.2572 Deep Learning
CSCI-GA.2580 Web Search Engines
CSCI-GA.2590 Natural Language Processing
CSCI-GA.2591 Advanced Topics in Natural Language Processing
CSCI-GA.2965 Heuristic Problem Solving
CSCI-GA.3033 Advanced Computer Vision
CSCI-GA.3033 Advanced Machine Learning
CSCI-GA.3033 Artificial Intelligence in Genomics
CSCI-GA.3033 Bayesian Machine Learning
CSCI-GA.3033 Big Data & ML Systems
CSCI-GA.3033 Big Data Science
CSCI-GA.3033 Big Data: Large Scale Machine Learning
CSCI-GA.3033 Cloud & Machine Learning
CSCI-GA.3033 Computer Vision for Science & Engineering
CSCI-GA.3033 Conceptual Gaps in Modern Machine Learning
CSCI-GA.3033 Data Analytics & Visualization in Healthcare
CSCI-GA.3033 Data Mining
CSCI-GA.3033 Data Science for Health
CSCI-GA.3033 Deep Decision Making & Reinforcement
CSCI-GA.3033 Deep Generative Models
CSCI-GA.3033 Efficient AI & Hardware Accelerator Design
CSCI-GA.3033 Embodied Learning & Vision
CSCI-GA.3033 Emerging Topics in Natural Language Processing
CSCI-GA.3033 Foundations of Deep Learning Theory
CSCI-GA.3033 Graphics Processing Units (GPUs): Architecture & Programming
CSCI-GA.3033 High Performance Machine Learning
CSCI-GA.3033 Integrating Machine Learning to Computer Vision
CSCI-GA.3033 Introduction to Deep Learning & LLM based Gen. AI Systems
CSCI-GA.3033 Introduction to Machine Learning
CSCI-GA.3033 Learning with Large Language & Vision Models
CSCI-GA.3033 Machine Learning for Healthcare
CSCI-GA.3033 Mathematical Foundations of Deep Learning & LLM
CSCI-GA.3033 Mathematics of Deep Learning
CSCI-GA.3033 Predictive Analytics
CSCI-GA.3033 Probabilistic Graphical Models
CSCI-GA.3033 Protein Design
CSCI-GA.3033 Reinforcement Learning with Foundation Models
CSCI-GA.3033 Robot Motion Planning
CSCI-GA.3033 Social Multiplayer Games
CSCI-GA.3033 Statistical Natural Language Processing
CSCI-GA.3033 Vision Meets Machine Learning
DS-GA 1001 Introduction to Data Science
DS-GA.1017 Responsible Data Science

Databases

CSCI-GA.2433 Database Systems
CSCI-GA.2434 Advanced Database Systems
CSCI-GA.2436 Realtime & Big Data Analytics
CSCI-GA.2437 Big Data Application Development
CSCI-GA.2568 Big Data
CSCI-GA.2621 Distributed Systems
CSCI-GA.3033 Programming Parallel Algorithms

Capstone

CSCI-GA.2130 Compiler Construction
CSCI-GA.2274 Advanced Computer Graphics
CSCI-GA.2434 Advanced Database Systems
CSCI-GA.2572 Deep Learning
CSCI-GA.2621 Distributed Systems
CSCI-GA.2945 High Performance Computing
CSCI-GA.2945 Monte Carlo Methods
CSCI-GA.3033 Big Data & ML Systems
CSCI-GA.3033 Cloud & Machine Learning
CSCI-GA.3033 Cloud Computing
CSCI-GA.3033 Cryptography of Blockchains
CSCI-GA.3033 Deep Decision Making & Reinforcement Learning
CSCI-GA.3033 Embodied Learning & Vision
CSCI-GA.3033 Geometric Modeling
CSCI-GA.3033 Graphics Processing Units (GPUs): Architecture & Programming
CSCI-GA.3033 High Performance Machine Learning
CSCI-GA.3033 Multicore Processors: Architecture & Programming Networks & Mobile Systems
CSCI-GA.3033 Reinforcement Learning with Foundation Models Software Engineering
CSCI-GA.3033 Technologies for Finance
CSCI-GA.3033 Virtual Reality
CSCI-GA.3812 Information Technology Projects