MSCS DEGREE REQUIREMENTS FORM (30 CREDITS) *last revised (04/14/2025)*

First Name: _____ Last Name:_____ N number:_____ NYUEmail:_____

Required: 30 credits with Capstone course (effective Fall 2024)

- **21 credits** – Standard graduate CS classroom-based courses

  Course _____ Semester_____ Grade_____ Credits: ____
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  Course _____ Semester_____ Grade_____ Credits: ____

- **6 credits** – related electives from CS, Math and Data Science classroom-based courses (3 or 6 credits)

  Course _____ Semester_____ Grade_____ Credits: ____

  Course _____ Semester_____ Grade_____ Credits: ____

- Remaining **3 credits** - credits transferred from graduate study in CS; external internship; and relevant graduate courses. At most 3 credits of external internship. Relevant graduate courses and external internships require DGS approval.

  Course _____ Semester_____ Grade_____ Credits: ____

Requirement A: A student must take the three foundational courses and maintain a GPA of 2.667 or higher 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** of the following four designated application areas (see page 2 for the list of application areas)

Course _____ Semester_____ Grade_____ Credits: ____

Requirement C: Student must complete a Capstone course with the grade of B (3.0) or better (see page 2 for the list of courses)

Course _____ Semester_____ Grade_____ Credits: ____

Graphics

- Advanced Computer Graphics
- Advanced Computer Vision
- Computational Geometry
- Computer Graphics
- Computer Vision
- Computer Vision for Science and Engineering
- Geometric Modeling
- Graphics Processing Units (GPUs): Architecture and Programming
- Integrating Machine Learning to Computer Vision
- Introduction to Computer Vision
- Learning with Large Language and Vision Models
- Social Multiplayer Games
- Virtual Reality
- Vision Meets Machine Learning

Computation for Science and Society

- Applied Cryptography and Network Security
- Bioinformatics and Genomics
- Blockchain and Its Applications
- Convex and Nonsmooth Optimization
- Cryptocurrencies and Decentralized Ledgers
- Data Analytics and Visualization in Healthcare
- Data Science for Health
- Encrypted Computation
- High Performance Computing
- Immersed Boundary Method
- Information and Communication Technology
- Introduction to Agent-Based Modeling
- Introduction to Cryptography
- Linear Programming
- Machine Learning for Healthcare
- Monte Carlo Methods
- Music Software Projects
- Nonlinear Optimization
- Numerical Methods I & II
- Numerical Optimization
- Practical Computer Security
- Public Interest Technology
- Quantum Computation
- Randomized Numerical Linear Algebra
- Responsible Data Science
- Scientific Computing
- Security and Privacy
- Social Networks
- Speech Recognition
- Stochastic Modeling and Uncertainty Quantification in Complex Systems
- Technologies for Finance
- Topics in Digital Media
- Topics in Numerical Analysis
- Values Embodied in Information & Communications Technology

Intelligent Systems

- Advanced Computer Vision
- Advanced Machine Learning
- Advanced Topics in Natural Language Processing
- Artificial Intelligence
- Bayesian Machine Learning
- Big Data and ML Systems
- Big Data Science
- Big Data: Large Scale Machine Learning
- Cloud and Machine Learning
- Computer Vision
- Computer Vision for Science and Engineering
- Conceptual Gaps in Modern Machine Learning
- Data Analytics and Visualization in Healthcare
- Data Mining
- Data Science for Health
- Deep Decision Making & Reinforcement Learning
- Deep Generative Models
- Deep Learning
- Efficient AI and Hardware Accelerator Design
- Embodied Learning and Vision
- Emerging Topics in Natural Language Processing
- Foundations of Deep Learning Theory
- Foundations of Machine Learning
- Heuristic Problem Solving
- High Performance Machine Learning
- Integrating Machine Learning to Computer Vision
- Introduction to Data Science
- Introduction to Deep Learning Systems
- Introduction to Machine Learning
- Learning with Large Language and Vision Models
- Logic in Computer Science
- Machine Learning
- Machine Learning for Healthcare
- Mathematical Foundations of Deep Learning & Large Language Models
- Mathematics of Deep Learning
- Natural Language Processing
- Predictive Analytics
- Probabilistic Graphical Models
- Protein Design
- Reinforcement Learning with Foundation Models
- Responsible Data Science
- Robot Motion Planning
- Social Multiplayer Games
- Statistical Natural Language Processing
- Vision Meets Machine Learning
- Web Search Engines

Databases

- Advanced Database Systems
- Big Data
- Big Data Application Development
- Database Systems
- Distributed Systems
- Programming Parallel Algorithms
- Realtime & Big Data Analytics

Capstone

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