# MSCEI DEGREE REQUIREMENTS FORM (last revised on 05/01/2026)

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

The MSCEI degree requires 33 credits to graduate.

**Computer Science/Courant Part of the Program**

**Courant Core Courses:** Students must complete the two following courses:

CSCI-GA 2810 Design and Innovation Semester _____ Grade ____ Credits ____

CSCI-GA 2830 Lean Launch Pad Semester _____ Grade ____ Credits ____

**CS Requirement A: Mathematical Techniques and Statistics Elective**

Course: _____ Semester _____ Grade ____ Credits ____

**CS Requirement B: Systems Engineering Elective**

Course: _____ Semester _____ Grade ____ Credits ____

Course: _____ Semester _____ Grade ____ Credits ____

**CS Requirement C: Applications Elective** (maximum of **one** external internship only for 3 credits)

Course: _____ Semester _____ Grade ____ Credits ____

Course: _____ Semester _____ Grade ____ Credits ____

Course: _____ Semester _____ Grade ____ Credits ____

**Leonard N. Stern School of Business (Stern) Part of the Program:** Students must complete the following four courses (6 credits total)

**Stern Requirement A:**
COR1-GB 1102 Leadership Semester _____ Grade ____ Credits ____

**Stern Requirement B:**
COR1-GB 2101 Strategy Semester _____ Grade ____ Credits ____

**Stern Requirement C:**
MGMT-GB 2129 Entrepreneurship Semester _____ Grade ____ Credits ____

**Stern Requirement D:**
COR1-GB 2105 Communication Semester _____ Grade ____ Credits ____

**Capstone Requirement:** Students must complete CSCI-GA 2840 Entrepreneurship Capstone

CSCI-GA 2840 Entrepreneurship Capstone Semester _____ Grade ____ Credits ____

**Computer Science Electives**

**Mathematical Techniques and Statistics**

CSCI-GA.1180-001 Mathematical Techniques for CS Applications
CSCI-GA.2112-001 Scientific Computing
CSCI-GA.2271-001 Computer Vision
CSCI-GA.2565-001 Machine Learning
CSCI-GA.2566-001 Foundations of Machine Learning
CSCI-GA.2572-001 Deep Learning
CSCI-GA.2965-001 Heuristic Problem Solving
CSCI-GA.3033-004 Statistical Natural Language Processing
CSCI-GA.3033-022 Deep Generative Models
CSCI-GA.3033-052 Advanced Machine Learning
CSCI-GA.3033-076 Vision Meets Machine Learning
CSCI-GA.3033-077 Big Data & ML Systems
CSCI-GA.3033-086 Quantum Computation
CSCI-GA.3033-087 Bayesian Machine Learning
CSCI-GA.3033-090 Deep Decision Making & Reinforcement Learning
CSCI-GA.3033-098 Data Science for Healthcare
CSCI-GA.3033-099 Introduction to Computer Vision
CSCI-GA.3033-102 Learning with Large Language & Vision Models
CSCI-GA.3033-115 Embodied Learning & Vision
CSCI-GA.3033-117 Randomized Algorithms
CSCI-GA.3033-118 Complexity
CSCI-GA.3033-119 Generative Models & Decision Making
CSCI-GA.3033-123 Encrypted Computation
CSCI-GA.3033-125 Reinforcement Learning with Foundation Models
CSCI-GA.3033-126 Mathematical Foundations of Deep Learning & LLM
CSCI-GA.3033-129 Artificial Intelligence in Genomics
CSCI-GA.3033-130 Randomness and Computation
CSCI-GA.3033-131 Building LLM Reasoners
CSCI-GA.3033-132 Iterative Methods for Systems of Equations
CSCI-GA.3033-135 Computational Genomics
CSCI-GA.3033-137 Information Theory and Applications in CS
CSCI-GA.3033-138 Approximation Algorithms
CSCI-GA.3033-139 Quantum Cryptography
CSCI-GA.3033-140 Honors Machine Learning
CSCI-GA.3033-141 Theoretical Foundations in Modern Machine Learning
CSCI-GA.3033-142 Quantum Information
CSCI-GA.3033-144 Convergence Analysis for Robot Algorithms
CSCI-GA.3033-148 Learning to Match Distributions - Optimal Transport, Flow Matching Applications
CSCI-GA.3033-7863 Space Robotics
CSCI-GA.3210-001 Introduction to Cryptography
CSCI-GA.3520-001 Honors Analysis of Algorithms **(permission required)**

**Systems Engineering**

CSCI-GA.2110-001 Programming Languages **(permission required)**
CSCI-GA.2130-001 Compiler Construction
CSCI-GA.2434-001 Advanced Database Systems
CSCI-GA.2436-001 Realtime & Big Data Analytics
CSCI-GA.2437-001 Big Data Application Development
CSCI-GA.2620-001 Networks & Mobile Systems
CSCI-GA.2621-001 Distributed Systems
CSCI-GA.2630-003 Foundations of Networks & Mobile Systems **(recommended)**
CSCI-GA.3033-034 Multicore Processors: Architecture & Programming
CSCI-GA.3033-077 Big Data & ML Systems
CSCI-GA.3033-078 Cryptocurrencies & Decentralized Ledgers
CSCI-GA.3033-121 Programming Parallel Algorithms
CSCI-GA.3033-127 Efficient AI Computing: Algorithm & Implementation
CSCI-GA.3033-9483 Efficient AI & Hardware Accelerator Design
CSCI-GA.3110-001 Honors Programming Languages **(permission required)**
CSCI-GA.3140-001 Abstract Interpretation

**Applications**

CSCI-GA.2270-001 Computer Graphics
CSCI-GA.2271-001 Computer Vision
CSCI-GA.2274-001 Advanced Computer Graphics
CSCI-GA.2390-001 Logic in Computer Science
CSCI-GA.2433-001 Database Systems
CSCI-GA.2436-001 Realtime & Big Data Analytics
CSCI-GA.2437-001 Big Data Application Development
CSCI-GA.2560-001 Artificial Intelligence
CSCI-GA.2565-001 Machine Learning
CSCI-GA.2566-001 Foundations of Machine Learning
CSCI-GA.2590-001 Natural Language Processing
CSCI-GA.2820-001 DevOps & Agile Methodologies (recommended)
CSCI-GA.2965-001 Heuristic Problem Solving
CSCI-GA.3033-004 Statistical Natural Language Processing
CSCI-GA.3033-025 GPUs: Architecture & Programming
CSCI-GA.3033.026 Cloud Computing
CSCI-GA.3033-027 Blockchain & Its Applications
CSCI-GA.3033-029 Social Networks
CSCI-GA.3033-034 Multicore Processors: Architecture & Programming
CSCI-GA.3033-055 Search Engine Architecture
CSCI-GA.3033-059 Big Data Science
CSCI-GA.3033-061 Predictive Analytics
CSCI-GA.3033-071 Geometric Modeling
CSCI-GA.3033-076 Vision Meets Machine Learning
CSCI-GA.3033-077 Big Data & ML Systems
CSCI-GA.3033-078 Cryptocurrencies & Decentralized Ledgers
CSCI-GA.3033-083 Machine Learning for Healthcare
CSCI-GA.3033-084 High Performance Machine Learning
CSCI-GA.3033-085 Cloud & Machine Learning
CSCI-GA.3033-086 Quantum Computation
CSCI-GA.3033-087 Bayesian Machine Learning
CSCI-GA.3033-090 Deep Decision Making & Reinforcement Learning
CSCI-GA.3033-091 Introduction to Deep Learning & LLM
CSCI-GA.3033-097 Virtual Reality
CSCI-GA.3033-098 Data Science for Healthcare
CSCI-GA.3033-099 Introduction to Computer Vision
CSCI-GA.3033-100 Public Interest Technology
CSCI-GA.3033-102 Learning with Large Language & Vision Models
CSCI-GA.3033-109 Computer Vision for Science & Engineering
CSCI-GA.3033-110 Technologies for Finance
CSCI-GA.3033-111 Protein Design
CSCI-GA.3033-115 Embodied Learning & Vision
CSCI-GA.3033-117 Randomized Algorithms
CSCI-GA.3033.118 Complexity
CSCI-GA.3033-119 Generative Models & Decision Making
CSCI-GA.3033-123 Encrypted Computation
CSCI-GA.3033-125 Reinforcement Learning with Foundation Models
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CSCI-GA.3033-148 Learning to Match Distributions - Optimal Transport, Flow Matching & Applications
CSCI-GA.3033-7863 Space Robotics
CSCI-GA.3033-9483 Efficient AI & Hardware Accelerator Design
CSCI-GA.3205-001 Applied Cryptography & Network Security
CSCI-GA.3210-001 Introduction to Cryptography