

# MSCEI DEGREE REQUIREMENTS FORM (last revised on 05/15/2026)

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

### 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**)

### 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 GPU: 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 LLM-based Generative AI Systems  
CSCI-GA.3033-097 Virtual Reality

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.3033-134 The Science of Deep Learning  
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**)

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

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  
CSCI-GA.3033-126 Mathematical Foundations of Deep Learning & LLM  
CSCI-GA.3033-127 Efficient AI Computing: Algorithm & Implementation  
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.3033-134 The Science of Deep Learning  
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.3033-9483 Efficient AI & Hardware Accelerator Design  
CSCI-GA.3205-001 Applied Cryptography & Network Security  
CSCI-GA.3210-001 Introduction to Cryptography