MSCS DEGREE REQUIREMENTS FORM last revised (12/13/2017)

First Name: ___________________ Last Name:_________________________ N number:________________________

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: ____

- **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.
  
  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 2.7 or better in the courses:

- CSCI-GA 1170-001 Fundamental Algorithms Semester_______ Grade_____ Credits: __ Placed Out ___
- CSCI-GA 2110-001 Programming Languages Semester_______ Grade_____ Credits: __ Placed Out ___
- CSCI-GA 2250-001 Operating Systems Semester_______ Grade_____ Credits: __ Placed Out ___

**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: ____
Graphics
- Advanced Computer Graphics
- Advanced Computer Vision
- Computational Geometry
- Computer Graphics
- Computer Vision

Computation for Science and Society
- Advanced Topics in Numerical Analysis: Convex and Nonsmooth Optimization
- Applied Cryptography and Network Security
- Bioinformatics and Genomics
- Cryptocurrencies and Decentralized Ledgers
- Data Science for Health
- Financial Software Projects
- Information and Communication Technology for Developing Countries
- Introduction to Agent-Based Modeling in Public Health
- Introduction to Cryptography
- Linear Programming
- Monte Carlo Methods

Intelligent Systems
- Advanced Computer Vision
- Advanced Machine Learning
- Advanced Topics in Natural Language Processing
- Artificial Intelligence
- Big Data: Large Scale Machine Learning
- Big Data and ML Systems
- Big Data Science
- Computer Vision
- Data Mining
- Data Mining for Business Analytics – Technical
- Deep Generative Models
- Deep Learning
- Foundations of Machine Learning
- Heuristic Problem Solving

Databases
- Advanced Database Systems
- Big Data
- Data Mining for Business Analytics - Technical

Database Systems
- Realtime & Big Data Analytics

Requirement C: A student must complete a designated capstone course with the grade of B (3.0) or better. 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: _____