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: ___
  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 2.667 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
- Applied Cryptography and Network Security
- Bioinformatics and Genomics
- Convex and Nonsmooth Optimization
- Cryptocurrencies and Decentralized Ledgers
- Data Science for Health
- Financial Software Projects
- High Performance Computing
- Immersed Boundary Method
- Information and Communication Technology for Developing Countries
- Introduction to Agent-Based Modeling
- Introduction to Cryptography
- Linear Programming
- Monte Carlo Methods
- Music Software Projects

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
- Cloud and Machine Learning
- 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

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: ____

* Advanced Computer Graphics
* Advanced Database Systems
* Cloud and Machine Learning
* Cloud Computing
* Compiler Construction
* Distributed Systems
* Graphics Processing Units (GPUs): Architecture and Programming

* Geometric Modeling
* Graphics Processing Units (GPUs): Architecture and Programming
* Integrating Machine Learning to Computer Vision
* Social Multiplayer Games
* Vision Meets Machine Learning

* Nonlinear Optimization
* Numerical Methods I
* Numerical Methods II
* Numerical Optimization
* Practical Computer Security
* Scientific Computing
* Security and Privacy
* Speech Recognition
* Social Networks
* Stochastic modeling and uncertainty quantification in complex systems
* Topics in Digital Media
* Topics in Numerical Analysis
* Values Embodied in Information & Communications Technology

* High Performance Computing for Machine Learning
* Integrating Machine Learning to Computer Vision
* Introduction to Machine Learning
* Logic in Computer Science
* Machine Learning
* Machine Learning for Healthcare
* Mathematics of Deep Learning
* Natural Language Processing
* Predictive Analytics
* Probabilistic Graphical Models
* Robot Motion Planning
* Social Multiplayer Games
* Statistical Natural Language Processing
* Vision Meets Machine Learning
* Web Search Engines

* Database Systems
* Realtime & Big Data Analytics