Requirement A: 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 B:** A student must take the three foundational courses and maintain a rolling 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 C:** 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
- Computational Photography
- Computer Games
- Computer Graphics
- Computer Vision

- Computer Vision and Tracking
- Experiments in Motion Capture
- Geometric Modeling
- Graphics Processing Units (GPUs):
  - Architecture & Programming
  - Interactive Shape Modeling
  - Motion Capture for Gaming & Urban Sensing

- Multimedia
- Social Multiplayer Games
- Special Topics in Computer Animation
- User Interfaces
- Visualization
Computation for Science and Society
* Advanced Cryptography
* Advanced Topics in Numerical Analysis: Convex & Nonsmooth Optimization
* Advanced Topics: Data Science
* Advanced Cryptography
* Algorithmic & Economic Aspects of Internet
* Applied Cryptography & Network Security
* Bioinformatics
* Bioinformatics and Genomics
* Computational Biology
* Computational Fluids
* Computational Fluid Dynamics
* Computational PDEs
* Computational Systems Biology
* Financial Computing
* Financial Computing Projects
* Financial Software Projects
* High Performance Scientific Computing
* Immersed Boundary Method
* Information & Communication Technology for Developing Countries

Intelligent Systems
* Advanced Computer Vision
* Advanced Topics in Natural Language Processing
* Artificial Intelligence
* Big Data: Large Scale Machine Learning
* Computer Vision
* Data Mining
* Data Warehousing and Mining
* Deductive Verification of Reactive Systems
* Deep Learning
* Formal Methods
* Foundations of Machine Learning
* Heuristic Problem Solving
* Information Science of Marketing
* Logic in Computer Science
* Machine Learning
* Machine Learning & Computational Statistics
* Mobile Robots
* Natural Language Processing
* Optimization in Machine Learning
* Programming Semantics, Analysis & Verification by Abstract Interpretation
* Robot Motion Planning
* Robotics
* Social Multiplayer Games
* Statistical Natural Language Processing
* Special Topics in Machine Learning: Probabilistic Graphical Models
* Topics in Automated Deduction
* Web Search Engines

Databases
* Advanced Database Systems
* Big Data
* Data Mining
* Data Warehousing
* Database System
* Distributed Storage Systems
* Realtime & Big Data Analytics

Requirement D: 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 advance lab.

Course _____________________________ Semester_______ Grade_____ Credits: ____
* Advanced Computer Graphics
* Advanced Database Systems
* Cloud Computing
* Compiler Construction
* Distributed Systems
* Graphics Processing Units (GPUs): Architecture & Programming
* Info Tech Projects
* Multicore Processors: Architecture & Programming
* Networks & Distributed Systems
* Search Engine Architecture
* Software Engineering