Name: ___________________________        ID #:_____________________

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: ____

**Requirement B:** 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 C:** A student must pass **ONE** course in **TWO** of the following four designated application areas

- 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

Course ________________________________ Semester______ Grade____ Credits: ____
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
- Computational Machine Learning
- 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
- Predictive Analytics
- Programming Semantics, Analysis & Verification by Abstract Interpretation
- Robot Motion Planning
- Robotics
- Statistical Multiplayer Games
- 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 a capstone advanced 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
- Networks & Mobile Systems
- Search Engine Architecture
- Software Engineering