MS Degree Course Requirements

(for Students Matriculated in Spring 2012 or later)

Updated course list on 12/12/2013

Each degree candidate will be required to pass, with an average of B or better, and not more than two grades below B, the following minimum number of credits, distributed to include core courses and electives.

Core courses (12 credits, 4 courses):

- 91.503 Algorithms
- One course from Group II
- One course from Group III
- One course from Group IV

Group I (Foundations):

91.500 Fundamentals of Computer Science
91.502 Foundations of Computer Science
91.503 Algorithms
91.504 Advanced Algorithms: Computational Geometry
91.531 Design of Programming Languages
91.534 Compiler Construction
91.604 Network Optimization
91.710 Approximation Algorithms

Group II (Systems and Networks):

91.515 Operating Systems I
91.516 Operating Systems II
91.561 Computer & Network Security I
91.562 Computer & Network Security II
91.563 Data Communications I
91.564 Data Communications II
91.580 Developing Android Apps
91.661 Advanced Topics in Network Security

Group III (Human-Computer Interaction, Visualization, Robotics and AI):

91.523 Computer Vision I
91.527 Human-Computer Interaction
91.528 Evaluation of Human Computer Interactions

91.530 Natural Language Processing
91.541 Data Visualization
91.543 Artificial Intelligence
91.544 Data Mining
91.545 Machine Learning
91.546 Computer Graphics I
91.547 Computer Graphics II
91.548 Robot Design
91.549 Mobile Robots
91.550 Topics: Advanced Robotics Development
91.550 Topics: Human-Computer Interaction
91.550 Topics: Human-Robot Interaction
91.550 Topics: Multi-Touch Computing
91.550 Advanced Topics in Computer Vision
91.641 Advanced Topics in Visualization

Group IV (Information Management and Analysis):

91.513 Internet and Web Systems I
91.514 Internet and Web Systems II
91.540 Visual Analytics
91.573 Database I
91.574 Database II
91.580 Topics: Big Data Modeling
91.580 Topics: Bioinformatics
91.530 Topics: Multimedia Computing
91.673 Advanced Database Systems

Electives (18 credits, 6 courses in the 91.5xx and 91.6xx series or other courses approved by the department)

Total: 30 credits

Master's Thesis

An optional master's thesis can be substituted for at most six credits, and can be used to substitute for 2 courses as electives. Students who wish to do a thesis must file a *Proposed Thesis Committee* form with the Graduate Coordinator prior to beginning work on the thesis.