MS Degree Course Requirements

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, grouping areas, and electives:

**Core Courses** (9 credits, 3 courses).
- 91.503 – Algorithms.
- One course from Group II (if a course is from a sequence, then it must be the first course in that sequence)
- One course from either Group III or Group IV (if a course is from a sequence, then it must be the first course in that sequence)

**Grouping Areas** (12 credits, two courses from one group and two courses from another group; no two core courses can pair with each other within a group)

**Group I (Foundations):**
- 91.502 Foundations of CS
- 91.503 Algorithms
- 91.504 Advanced Algorithms: Computational Geometry
- 91.510 Topics: Computer Science Fundamentals
- 91.531 Design of Programming Languages
- 91.534 Compiler Writing I
- 91.535 Compiler Writing II
- 91.538 Semantics of Programming Languages
- 91.540 Topics: Language and Compilation
- 91.590 Symbolic Computation

**Group II (Systems and Networks):**
- 91.515 Operating Systems I
- 91.516 Operating Systems II
- 91.520 Digital Storage Architectures
- 91.551 Computer Architecture
- 91.553 Parallel Processing
- 91.555 Computer Networks
- 91.560 Embedded System and Storage
- 91.563 Data Communications I
- 91.564 Data Communications II
- 91.561 Computer Security I
- 91.562 Computer Security II

**Group III (Human-Computer Interaction, Visualization and Robotics):**
- 91.527 Human-Computer Interaction
- 91.528 Evaluation of Human Computer Interaction
- 91.548 Robot Design
- 91.549 Mobile Robots
91.546 Graphics I
91.547 Graphics II
91.541 Scientific Data Visualization
91.568 Seminar in Human-Computer Interaction

Group IV (Information Management and Analysis):
91.513 Internet and Web Systems I
91.514 Internet and Web Systems II
91.522 Object Oriented Analysis
91.523 Software Engineering I
91.543 Artificial Intelligence
91.544 Machine Learning and Data Mining
91.573 Database I
91.574 Database II

Electives (9 credits, 3 elective courses from these groups or from the list of other courses approved by the department)

Total: 30 credits

Masters Thesis
An optional master's thesis can be substituted for at most six credits, and can be used to substitute for 2 courses in a single group. 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.