MS Degree Course Requirements

Approved by the Faculty on September 20, 2007

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)
  - 91.502 Foundations of CS
  - 91.503 Algorithms
  - 91.531 Design of Programming Languages

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 Graduate 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 Program 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
  - 91.563 Data Communications I
  - 91.564 Data Communications II
  - 91.555 Computer Networks
  - 91.560 Embedded System and Storage
  - 91.561 Computer Security I
  - 91.562 Computer Security II
**Group III (Human-Computer Interaction, Visualization and Robotics)**\(^1\):

- 91.527 Human-Computer Interaction
- 91.548 Robot Design
- 91.549 Mobile Robots
- 91.546 Graphics I
- 91.547 Graphics II
- 91.541 Scientific Data Visualization
- 91.565 Evaluation of Human Computer Interaction
- 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
- 91.573 Database I
- 91.574 Database II
- 91.543 Artificial Intelligence
- 91.544 Machine Learning and Data Mining

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

Total: 30 credits

**Notes:**

- Each graduate course must have one or more group designations.
- Group designations for topics classes, directed studies, and new courses must be approved by the department chairperson.
- The list of approved course group designations will be maintained by the graduate committee.
- The new system of groups will be effective for students matriculated as of September, 2008 or later.
- The current limit of one directed studies course per student for the MS degree will remain in effect.

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\(^1\) The name of Group III was changed from *Human and Computer Environment Interaction* to *Human-Computer Interaction, Visualization and Robotics* on 31 March, 2008.
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.