Guidelines For the Master of Science Degree
Department of Computing and Information Sciences
Kansas State University
August 2009
Graduate Studies Committee

Dr. David Gustafson, Chair	**Dr. Torben Amtoft**
Dr. William H. Hsu	**Dr. Masaaki Mizuno**

I.   Introduction

These guidelines describe departmental and university requirements for a Master of Science (MS) Degree in Computer Science. If exceptions are warranted, the student must consult the Graduate Studies Committee to determine alternative requirements.

The Guidelines stated here are those of the Computing and Information Sciences Department. Certain other regulations are imposed by the Kansas State University Graduate School and are described in the *Student Guide of Masters and Doctoral Degrees*, available from the Graduate School office.

Graduate students are expected to participate in the professional activities of the Department. This includes attending seminars and colloquia, suggesting improvements in curriculum (both graduate and undergraduate), and suggesting new teaching techniques.

II. Requirements for the Master of Science Degree

The MS degree requires a minimum of 30 credit hours of graduate level coursework; up to 10 hours can be transferred from other accredited graduate programs. Each new student is assigned a faculty member to serve as an *Academic Advisor*. The Academic Advisor helps the student select courses and reviews the student's progress until a *Major Professor* is selected. The coursework must include one course from each of the following areas:

Implementation: The student must do a significant individual implementation project that is certified by the instructor as meeting the implementation requirements. Courses that can be used include: CIS 706 (Translator Design), 722 (Operating System Practices), 736 (Computer Graphics), and 690 (Implementation Project).

Languages: CIS 705 (Programming Languages), CIS 706 (Translator Design), 771 (Specification and Verification), and CIS 806 (Semantics of Programming Languages)

Systems: CIS 720 (Operating Systems), CIS 721 (Real-Time Systems), CIS 722 (Operating System Practices), CIS 725 (Advanced Computer Networks), and CIS726 (Advanced WWW Technologies).

Structures: CIS 730 (Artificial Intelligence), 740 (Software Engineering), and 761 (Database Systems).

Theory: CIS 770 (Formal Language Theory), and 775 (Analysis of Algorithms).

Specialization: Any course numbered CIS 8XX or CIS 9XX except seminar, projects, and MS research courses.

The student must receive a grade of "B" or better for each course used to satisfy the above requirements.

IIa. Major Professor and Supervisory Committee

After 12 graduate credits have been completed, a student must select a *Major Professor*. The Major Professor helps the student choose a *Supervisory Committee*, pick a *Program Option*, and formulate a *Program of Study* (POS). The Supervisory Committee is a group of three faculty members (including the

Major Professor) that approves the student's Program of Study and Program Option, and gives final approval for the student's degree. The Supervisory Committee and courses used to satisfy the MS requirements are recorded on the Program of Study form and submitted to the Graduate School.

IIb. The Program Option
The Program Option can take one of three forms:

> **Non-Thesis/Report Option:** Write a major paper, for example, as part of a CIS 8XX course. This option requires 33 credit hours of CIS coursework for a MS degree.

> **Report Option:** Undertake a project that culminates in a written report; 1 credit hour of CIS 897 and 2 credit hours of CIS 898 are awarded for the work. Project work from CIS 690 can be applied to the project, subject to the approval of the Major Professor. This option requires 30 credit hours for a MS degree.

> **Thesis Option:** Perform original research that culminates in a written thesis; 6 credit hours of CIS 899 are awarded for the work. This option requires 30 credit hours for a MS degree.

The document written to satisfy the Program Option should represent the best possible writing by the student; it is not to be written or extensively edited by the Major Professor. The student must show evidence of an appropriate academic effort in the Report or Thesis option. This effort must include a literature survey, an overview of the problem area and a discussion of how their efforts relate to the problem. Students should begin writing early enough so there will be time for review by the Major Professor and rewriting by the student prior to the Oral Examination.

If a student chooses the thesis or report option, the thesis or report must meet the Graduate School's standards. A final draft copy of the thesis or report is to be submitted to the Major Professor one month prior to the final oral examination. The Graduate School requires an electronic version of the thesis or report, which is submitted after the final Oral Examination.

IIc. The Final Oral Examination

Two weeks prior to the final Oral Examination, the student must schedule his examination with the department office and fill out the Approval to Schedule Final Examination form (available online). Once the Supervisory Committee members have signed the Approval to Schedule Final Examination form, the student returns the form to the Graduate School to notify them of the date, time and place of the oral examination, and to cause the ballot to be sent to your Major Professor. The examination must take place before the graduation deadlines set each semester by the Graduate School.

The final Oral Examination is a presentation of the student's Program Option work and a defense of the student's scholarly effort. The exact format of the examination is decided by the Supervisory Committee, and the student must consult the Major Professor prior to the examination to establish the format.

A student can either pass or fail the final Oral Examination, subject to a vote by the Supervisory Committee. If the student fails, a second attempt of the Oral Examination cannot be retaken in less than two weeks nor more than twelve months after the failed examination, unless an extension is granted by the Dean of the Graduate School. No third try is allowed.

III. Normal Progress

Each semester of enrollment, a student must make *normal progress* towards the MS degree. Normal progress is considered to be the following:
   -- a cumulative grade point average of 3.0 or better.
   -- a Major Professor selected and a Program of Study filed with the Graduate School after the completion
      of 12 credit hours.

IV. Unresolved Issues

Any issues not covered in this document shall be resolved by the Graduate Studies Committee in consultation with the faculty of the KSU Department of Computing and Information Sciences.