

DEPARTMENT OF COMPUTER SCIENCE
The University of Iowa

GRADUATE STUDENT HANDBOOK
2007-08



Revised 8/15/07

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Graduate Student Handbook

Introduction

Welcome to the Computer Science Department at The University of Iowa. This handbook contains general information, degree requirements, and departmental rules and regulations for students pursuing (or wishing to pursue) a graduate degree in our department. It is a supplement to the *Manual of Rules and Regulations of the Graduate College* published by the Graduate College, and the *General Catalog*, published by the Registrar's Office. These documents as well as other, more general, information about The University of Iowa are available on the Web at <http://www.uiowa.edu>, the University's main web site.

The information contained herein applies to students matriculating in Fall 2007. Students matriculating prior to Fall 2007 have the option of fulfilling the degree requirements in force at the time of matriculation. For information about those requirements, please consult the previous versions of this handbook, available in the CS Department Office.

For more information about the Computer Science Department, visit <http://www.cs.uiowa.edu>. We anticipate periodic revisions of this handbook and welcome your comments, directed to cs_info@cs.uiowa.edu.

Nondiscrimination Statement

The University of Iowa prohibits discrimination in employment, educational programs and activities on the basis of race, national origin, color, creed, religion, sex, age, disability, veteran status, sexual orientation, gender identify, or associational preference. The University also affirms its commitment to providing equal opportunities and equal access to University facilities.

For additional information, contact the Office of Equal Opportunity and Diversity, (319) 335-0705 (voice) or (319) 335-0697 (text), 202 Jessup Hall, The University of Iowa, Iowa City, Iowa, 52242-1316.

Administrative Staff

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1. Admission

The University of Iowa Computer Science Department offers three graduate degree programs: a research-oriented PhD degree; a practice-oriented MCS degree, and an MS degree, which is typically only granted to students working towards the PhD. A subtrack in software engineering is available within the MCS program; in addition, interdisciplinary studies programs at both masters and doctoral levels are available through the Graduate College.

1.1. Choice of Program

Candidates are advised to apply directly to the program best suited to their eventual academic goal. Students interested in pursuing research or academic careers should apply to the PhD program, while those seeking additional preparation for industrial careers should apply to the MCS program.

Students applying to the PhD program need not have a master's degree prior to admission. PhD candidates may opt to receive either an MS or an MCS degree while working towards the PhD, although there is no requirement they do so. Students who hold a master's degree upon entering the PhD Program may apply for transfer credit of those courses towards the PhD program requirements (see Section 3.2.7 of this handbook).

Students applying to the PhD program who are not selected for admission will automatically be considered for admission to the MCS program if they do not already hold a master's degree.

1.2. Minimum Requirements

Students seeking admission to our graduate programs are subject to both the minimum standards set by the Graduate College and also to specific departmental standards. The basic requirements are:

- a total number of courses equivalent to a four-year undergraduate degree;
- a minimum undergraduate GPA of 3.0 on a 4-point scale;
- strong GRE scores -- required for PhD applicants, strongly recommended for MCS applicants -- ($V+Q+130*W \geq 1800$, where V=verbal, Q=quantitative, and W=analytic writing); and
- if applicable, a minimum computer-based TOEFL score of 213 (550 for the paper-based test or 81 for the Internet-based) or a minimum IELTS score of 7.0 (with no section score lower than 6.0). However, students scoring below 250 on the computer-based test (600 on paper-based or 100 on Internet-based) are generally not admitted.

Please be aware that these are minimum scores, and that students admitted typically score much higher.

1.3. Application Process

The candidate may file an application for admission online (available at The University of Iowa web site <http://www.uiowa.edu/admissions/>) or download the form to print it off. The candidate must also submit official transcripts, test scores and other supporting material (e.g., a statement of purpose) by the designated deadline for the session in which admission is requested. The University of Iowa application fee must be paid before the application is considered.

1.4. Application Deadlines

Those seeking admission for the fall semester must have their completed applications on file by February 1. For full consideration, all supplementary materials (transcripts, letters of recommendation and statement of purpose) should also be received by that date. We do not, in general, accept applications for spring or summer admission.

1.5. Admission Criteria

Admission decisions for both the PhD and MCS programs are based on prior academic performance, letters of recommendation, scores on the Graduate Record Examination (GRE) and Test of English as a Foreign Language (TOEFL, if applicable), as well as the applicant's written statement of purpose. Students are not admitted directly to the MS program; it is only awarded to selected students working towards the PhD.

The successful applicant will have strong grades in the following key areas:

- Math foundations (calculus, discrete math, probability, numerical analysis, etc)
- Programming (C, C++, Java) and programming language foundations
- Data structures and algorithms
- Software and hardware systems

1.6. Conditional Admission

In exceptional circumstances, a student who does not meet the criteria for regular admission may be granted conditional admission. The Department will specify the conditions a student must meet to achieve regular status and will assume responsibility for advising the student. Typically, these conditions are satisfactory completion of one or more undergraduate classes. The student must fulfill the conditions within two sessions of registration in the Graduate College, or face dismissal. Admission in this special category is reserved for cases where there are strong indications for success in the program.

1.7. Early Admission

A student who is within 6 semester hours of having satisfied all the requirements for the bachelor's degree at The University of Iowa or any other accredited college may be granted early admission to the Graduate College. With early admission, the student may begin their graduate course work at the same time they are completing their last semester of undergraduate study.

1.8 Joint BA/MCS and BS/MCS Programs

Current UI students enrolled in the Department's joint bachelor's/master's program may share up to 12 semester hours of coursework counted towards both graduate and undergraduate program requirements. For more information on these programs, see the CS departmental website.

1.9. Deferred Admission

Students admitted to either the PhD or MCS program may request a deferral of admission for up to one year beyond the originally specified matriculation date. While such deferrals are automatically granted, students offered admission with financial support who defer their start date will not be guaranteed the same financial package the following year.

1.10. Readmission

Students who are admitted to the Graduate College, but who then fail to register for a period of 36 months or more must apply for readmission. Acceptance is dependent upon departmental approval for the session in which readmission is desired. Consideration of the application for readmission will be governed by the departmental and Graduate College admissions standards in effect at the time of reapplication.

1.11. Reconsideration

Candidates not selected for admission may request reconsideration the following academic year without preparing a new application by contacting The University of Iowa Office of Admission and requesting a change in session, or by requesting that the CS Graduate Program Administrator initiate the change. Note that it is the candidate's responsibility to ensure that any updated information or documentation is provided before subsequent application deadlines.

1.12. Dual Degrees

Students in the doctoral program of another UI department may elect to pursue getting an MCS degree concurrent with their doctoral program. Students will need approval from their home department before requesting admission to the MCS program. Contact the CS Graduate Program Administrator for more information.

1.13. Change in Program

The Department recognizes that a student's goals may change once they begin graduate study. Any student contemplating such a change in status should discuss the issue with their advisor and the Director of Graduate Studies.

After consulting their faculty advisor, students opting to drop from the PhD to the MCS program may do so by filing an appropriate Graduate College Change of Status form with the Department Graduate Program Administrator. Such requests are almost always approved.

Students originally admitted to the MCS program may also request a change in status in order to enter the PhD program. Note, however, that since the PhD is the more selective of the two programs, a request to change from the MCS to the PhD program is not approved automatically, and will receive the same level of scrutiny afforded external applicants to the PhD program.

2. Financial Support

Several forms of financial support are available through the Department of Computer Science and the Graduate College. These include graduate assistantships (both teaching and research assistantships), scholarships, and, for exceptional entering students, University of Iowa Presidential Graduate Fellowships. Competition for these positions is quite keen.

The Department typically commits to provide financial support to full-time PhD students as long as the student continues to make appropriate progress. This progress is measured by timely completion of qualifying, comprehensive, and final exams, research, grades, and performance of assistantship duties (see Section 2.2).

Doctoral students who are employed by the Department will receive base stipend increases when achieving program milestones – 2% at the qualifying exam, and an additional 3% at the comprehensive exam.

A student must be formally admitted to the Graduate College before being tendered any form of graduate appointment. Scholars, fellows, and research and teaching assistants must be registered as students in good standing in order to hold such appointments. Appointments will be terminated when registration and/or student status is terminated.

2.1. Stipends and Tuition Scholarships

In the Computer Science Department, pay ranges from \$16,277 to \$17,566 for half-time (50%) teaching and research assistants (2007-08 academic year figures).

Graduate assistants holding appointments of 25% or greater are assessed tuition at the resident rate. In addition, students holding at least a 25% appointment and enrolled for 9 or more semester hours of coursework will receive a tuition scholarship of \$1,962 per semester (2007-08 academic year figure; not including summer session). The tuition scholarship is prorated if the student is enrolled for fewer than 9 semester hours.

2.1.1. English Proficiency Incentive

Beginning with the 2007-08 academic year, the Computer Science Department will provide a financial incentive to students whose first language is not English to achieve high ratings on the TA preparation exam for oral competency. Those students achieving a B-level certification will receive a \$200 base stipend increase for the academic year. Those students who achieve an A rating after having a B rating will receive a \$400 base stipend increase for the academic year. Those students achieving an A-level certification will receive a \$600 base stipend increase for the academic year. Native English-speakers will be assumed to have an A rating. Stipend increases will take effect immediately for entering students, and in the fall semester following re-taken exams that result in higher ratings. Incentives are applicable to both PhD and MCS students, and to those holding either teaching or research assistantships.

2.2. Assistantship Job Expectations, Performance Review and Work Load

All RAs and TAs will receive written notification of their assistantship expectations and general guidelines as to the time needed to perform each task within their job description. Feedback from faculty supervisors and teaching evaluations will be used to conduct regular performance reviews. NOTE: Renewal of assistantships is always subject to satisfactory performance of assistantship duties, notwithstanding any explicit or implicit promise of support at admission.

A quarter-time (25%) assistantship carries a responsibility for an average of 10 hours of work per week; a half-time (50%) assistantship means an average of 20 hours per week. Except in unusual circumstances and when prior approval has been obtained, appointments or combinations of appointments exceeding 50% are not permitted.

2.3. Teaching Assistantships

Teaching assistantships are the most common form of financial aid, generally given to graduate students in their first two years of the program. Teaching assistantships serve two purposes: assistance in the instructional program of the University and the preparation of future college teachers. In order to achieve both aims, scholastically superior graduate students who show exceptional promise as teachers are selected for teaching assistantships.

2.3.1. TA Application Process

All graduate students wishing to receive financial support as a TA must formally apply for an award before the specified deadline. Notices describing how to apply for support will be sent to all graduate students in October (for the spring semester) and March (for the summer session and fall semester).

2.3.2. Absence Policies

All absences, except for illnesses or family emergencies, must be pre-approved by the Director of Graduate Studies or the DEO (it is not sufficient to get an absence "ok'd" by other TAs or your course supervisor). TAs must report to their faculty supervisor if they will be absent from class or unable to perform their TA duties due to illness. TAs are not expected to make up for time missed on an hour-for-hour basis. Rather, they are expected to complete their work assignments in a timely and professional manner; for example, scheduling an extra class or holding additional office hours if necessary. Note that the first day of the TA appointment is the third business day before classes begin. Unless pre-approved, failure to report by that time may result in loss of appointment or pay deduction. Please refer to the 2007-08 Computer Science Teaching Assistant

Handbook for more information on this policy, or see the Departmental Administrator if you have any questions.

2.4. Research Assistantships

For many students, support after the second year should come substantially from sources other than teaching assistantships, typically as research assistants. Research assistantships are awarded by faculty to qualified graduate students to participate in scholarly research. In awarding research assistantships, faculty members often give preference to PhD students and those who demonstrate strong potential for research. RA positions should be sought via individual faculty; the Department does not award RA positions directly.

2.4.1. Absence Policies

All absences, except for illnesses or family emergencies, must be pre-approved by the faculty supervisor. Unusual absences (e.g., of long duration) must also be approved by the Director of Graduate Studies or the DEO. RAs are not expected to make up for time missed on an hour-for-hour basis. Rather, they are expected to complete their work assignments in a timely and professional manner.

2.5. Registration Requirements

Full-time students are normally expected to take at least 9 semester hours during the fall and spring semesters (exception: MCS students in their final term may register for less than 9 semester hours). Part-time students are generally not eligible for TA positions.

On rare occasions, pre-comprehensive-exam PhD students holding assistantships and actively involved in research may be permitted to take as few as 6 semester hours; such students must have prior approval from the Director of Graduate Programs, and must file a "short hours" form with the Registrar's office (additional constraints may apply to international students seeking reduced hours). Post-comp students are considered full-time while working on their dissertation, with registration of at least two semester hours.

Note that students holding research assistantships or fellowships in the summer must be registered for a summer session course if the supporting funds are from the Graduate College. At the present time, TAs need not be registered in a summer session if they were registered during the preceding academic year.

2.5.1. Full-Time vs. Part-time Status

Students should be aware of consequences when dropping courses result in part-time status. Full-time status for graduate students is 9 semester hours or more; half-time status is 5-8 s.h.

- Visa status is affected by anything less than full-time status for international students during the academic year. Forms must be submitted to OISS at the beginning of each applicable semester. Use the form, Part-Time Enrollment Authorization for F-1 and J-1 Students, available on the OISS website.
- If a student has been in the U.S. more than five years, they must be at least half time to be exempt from Social Security and Medicare paycheck deductions.
- Students must be at least half time for purposes of loan deferment.
- Students must be full time to be covered by parent's health insurance. However, those covered by GradCare or SHIP need only be registered.

If applicable, the Registrar's "short-hour form" is available from the Graduate Program Administrator, or the Registrar's Service Center, 17 Calvin Hall.

2.6. Dismissal of Graduate Assistants

A policy defining procedures to be followed in the dismissal of assistants has been approved by the Board of Regents. Copies of this policy are available in the office of the Dean of the Graduate College.

2.7. COGS

Specific terms and conditions of employment for graduate assistants are largely governed by the collective bargaining agreement between The University of Iowa and the United Electrical, Radio and Machine Workers of America union, Local 896, more commonly known as COGS. The COGS contract may be viewed either from the University website <http://www.uiowa.edu/hr/relations/Cogs/cogs.pdf>, or directly from the COGS website <http://www.cogs.org>.

3. The Doctor of Philosophy (PhD)

The PhD program emphasizes preparation for research, teaching, and scholarly endeavor in academic settings or private, industrial, or governmental laboratories. It requires completion of a minimum number of course semester hours, satisfactory performance on qualifying and comprehensive exams, and the production and formal defense of a dissertation describing original research results. The requirements described here are in addition to the University-wide requirements for the PhD degree described in the *Manual of Rules and Regulations of the Graduate College*, Section XII.

3.1. Advising

Every graduate student must have a faculty advisor. For PhD students, the academic advisor usually also serves as the research supervisor and thesis committee chair. Entering students are initially assigned to the Director of Graduate Studies, but students are encouraged to seek Computer Science faculty members whose research interests align with their own.

3.1.1. Advisor Selection

Each student should select an academic advisor and dissertation committee chair from among the Computer Science Department faculty. Once a faculty member has agreed to serve as a student's advisor, a Change of Advisor form should be filed with the Graduate Program Administrator. The faculty recognizes that an individual student's interests may change with time, and that this may result in a student changing advisors accordingly.

3.1.2. External Advisors

Students wishing to pursue a PhD with an advisor/chair who is not a member of the Computer Science Department faculty must also designate a co-advisor from within the CS faculty to serve on their comprehensive and dissertation committees. The co-advisor serves to ensure that all CS departmental requirements are met for both the comprehensive exam and dissertation defense.

3.2. Course Requirements

The PhD requires completion of 72 semester hours of coursework beyond the bachelor's degree.

3.2.1. Core Requirement

All PhD students are required to take both courses below for a total of 6 semester hours:
22C:231 Design and Analysis of Algorithms
22C:135 Theory of Computation

3.2.2. Breadth Requirement

All PhD students are required to select a total of 3 courses (9 semester hours total), with at least one course selected from each of the following three categories:

Systems and Software:

22C:160 High Performance Computer Architecture

22C:162 Advanced Operating Systems

Networks and Distributed Systems:

22C:166 Distributed Systems and Algorithms

22C:168 Computer Communications

Programming Languages and Compilers:

22C:181 Formal Methods in Software Engineering

22C:185 Programming Language Foundations

22C:186 Compiler Construction

New or alternative offerings may, from time to time, be designated as also satisfying a given area requirement.

3.2.3. Practice Requirement

All PhD students are required to take at least one course (3 semester hours) having significant practical or implementation-oriented content. Courses satisfying this requirement will be so designated each semester, and some examples would include:

22C:144 Database Systems

22C:145 Artificial Intelligence

22C:151 Computer Graphics

22C:165 Parallel Programming

22C:174 Optimization Techniques

22C:177 High Performance Computing

22C:180 Fundamentals of Software Engineering

22C:198 Individual Programming Projects

3.2.4. Colloquium Requirement

All PhD students must accumulate at least 4 semester hours of 22C:399, the Computer Science Department colloquium series. Students enrolled in 22C:399 are graded S/U. The Department will offer approximately 10 talks each semester; of these, students must attend at least seven talks to get a satisfactory score for the course. (Note: if, for some reason the Department schedules significantly more or significantly less than 10 talks in a semester, the required number of talks that must be attended may be changed for that particular term.)

3.2.5. Cognate Area Requirement

All PhD students are required to select, in consultation with their advisor, a total of 9 semester hours constituting coherent coverage of an external cognate area. Reasonable choices include, but are not limited to, mathematics, statistics, genetics, biology, or an engineering discipline.

3.2.6. Elective Courses

PhD students should fill the remaining 41-44 semester hours with a combination of thesis hours, directed readings, CS graduate courses, and non-CS graduate courses, all approved by their advisor.

3.2.7. Transfer Credits

Graduate Admissions and the Department will review graduate coursework already completed that may warrant transfer credit. Advising sessions will determine how those credits will affect the student's program requirements. Note: regardless of how many transfer credit are awarded, Graduate College residency requirements must always be satisfied. Also, transferred courses that are being used to satisfy program requirements must be less than 10 years old at the time of the comprehensive exam.

To have a program requirement waived on the basis of prior graduate coursework, the student must submit a petition to the CS Graduate Program Administrator seeking appropriate modifications to the PhD program requirements to reflect their prior coursework. Note that such students should expect that qualifying and comprehensive exam time requirements (i.e., when the student should take those exams) may also be changed to reflect previous coursework.

3.3. Qualifying Exam Requirement

The purpose of the qualifying exam is to demonstrate the ability to read and communicate current research results.

3.3.1. Qualifying Exam Timetable

Students must pass the qualifying exam by the end of their second year. Qualifying exams are given only twice a year, approximately the first week of September and the last week of January. PhD students should attempt the qualifying exam at the beginning of their second year (a student will typically prepare for the qualifying exam during the summer after their first year, and may elect to enroll for directed readings credit while doing so).

3.3.2. Qualifying Exam Structure

A qualifying exam is based on a small number of research articles selected in consultation with the student's advisor. The candidate prepares a 15-20 page summary/discussion of this material (alternatively, a student may elect to choose their own, externally peer-reviewed conference or journal publication as a basis for the exam if their advisor deems it appropriate).

3.3.3. Qualifying Exam Panel

Once the candidate has filed a Request for PhD Qualifying Exam form (along with the candidate's summary document) with the Graduate Program Administrator, a panel of three faculty will be selected by the Department in accordance with an area-based random drawing and a date will be assigned during the scheduled exam period for the candidate's 20-40 minute oral presentation (the exam will occur no sooner than a week after filing the request in order to give the faculty panel a chance to review the student's qualifying exam document). The three-member faculty panel, along with the student's advisor acting in an advisory (non-voting) capacity, will decide the outcome of the exam by majority vote.

3.3.4. Qualifying Exam Failure

A student who fails the qualifying exam will be permitted to repeat the exam one additional time. PhD students who do not pass the qualifying exam by the second semester of the second year (regardless of the number of attempts undertaken) will be automatically dropped into the MCS program. Financial support for students changing to the MCS program is not guaranteed beyond their second year.

3.3.5. Master of Computer Science Degree (MCS) En Route

Students may request that an MCS degree be granted when all course requirements (32 s.h.) for the MCS have been satisfied. If an MCS degree is to be awarded, please be aware of the appropriate deadlines (e.g., Application for Degree and Plan of Study Summary Form). Note that students who opt for the MCS may not request an MS degree at the time of their comprehensive exam (see Section 3.4.2).

3.4. Comprehensive Exam Requirement

The comprehensive exam will consist of a review of the literature and preliminary outline and investigation of a research problem that will be pursued for the PhD thesis. Students should plan to pass their comprehensive exam before the end of their third year and certainly by the end of their fourth year to remain in good standing.

3.4.1. Comprehensive Exam Structure

The structure and evaluation of the comprehensive exam follows the procedures outlined in the *Manual of Rules and Regulations of the Graduate College*, Section XII (K). The student should file a Request for PhD Comprehensive Exam form with the Graduate Program Administrator, who will help ensure that the appropriate paperwork (including an up-to-date Graduate College Plan of Study summary form and a proposed exam committee) is submitted to the Graduate College for approval. Students must be registered for classes at the time of their comprehensive exam.

The exam may be written, oral, or both, at the discretion of the student's committee. A typical student might prepare a 20-30 page survey/discussion (along the lines of the introduction and literature review from an eventual thesis) for distribution to their faculty committee, followed at least a week later by a brief 20-40 minute oral presentation.

3.4.2. Master's Degree (MS) at Comprehensive Exam

Students may request that the MS degree be granted at the time of the comprehensive exam by indicating this on the Request for PhD Comprehensive Exam form and filed with the Graduate Program Administrator. The MS degree without thesis is awarded upon successful completion of the comprehensive exam but may, at the examination committee's discretion, be awarded even if the student does not pass the exam. Students may also choose to complete the thesis requirements and be awarded an MS with thesis degree. Note that students who opt to receive the MCS (see Section 3.3.5) may not elect to receive the MS. If an MS degree is to be awarded, please be aware of the appropriate deadlines (e.g., Application for Degree and Plan of Study Summary Form).

3.4.3. Post-Comprehensive Exam Registration

After completion of the comprehensive exam, the student is required to maintain continuous registration (fall and spring semesters) through completion of the dissertation. Note that there are special rules for post-comprehensive exam registration, as students will typically not be enrolled in classes, but rather will be working exclusively on the thesis requirement (see Section XII [L] of the *Manual of Rules and Regulations of the Graduate College*).

3.5. Dissertation Requirement

The dissertation must describe original research performed by the PhD candidate and must be defended before a faculty committee.

3.5.1. Dissertation Committee and Proposal Defense

At least six months prior to the final exam, a student must form a dissertation committee and circulate a formal thesis proposal to the committee. The proposal should describe the research performed to date, any related work, and outline the expected thesis results. The student must, in essence, argue the originality and significance of the expected results to the committee in a manner consistent with their advisor's counsel (this may or may not include an oral presentation). Students should complete the form, Request to Appoint a PhD Committee/Proposal Defense, when all members have agreed to serve on the committee and a date has been set for the defense.

3.5.2. Dissertation Defense

The structure and evaluation of the final exam will follow the procedure outline in the *Manual of Rules and Regulations of the Graduate College*, Section XII (M) through XII (P). A committee of at least five faculty members, with a majority being Computer Science Department faculty, is proposed by the candidate and his or her advisor, approved by the Department Chair, and appointed by the Dean of the Graduate College. Be aware that the appropriate paperwork, especially thesis deposits, must be filed with the Graduate College within the specified time constraints.

3.6. Residency Requirement

The Graduate College has additional explicit residence requirements that must be satisfied in order to obtain the PhD. For full details, see the *Manual of Rules and Regulations of the Graduate College*, Section XII (C).

3.7. Academic Standing

Students must maintain a minimum 3.0 grade point average to remain in good standing. Furthermore, each PhD student must, at a minimum:

- demonstrate academic progress in their coursework;
- demonstrate capacity and aptitude for research;
- pass the qualifying exam by the end of their second year; and
- pass the comprehensive exam by the end of their fourth year.

3.7.1. PhD Departmental Plan of Study Form

Each student is responsible for maintaining an up-to-date PhD Plan of Study document on file with the Graduate Program Administrator. The PhD Plan of Study is used to track student progress throughout the program, and should be updated each semester in collaboration with the student's advisor. It is also used to prepare the Graduate College's Plan of Study summary document when requesting permission to take the comprehensive examination.

3.7.2. Academic Review

The faculty will meet each fall to review all aspects of each student's progress towards a degree, with student standing ultimately determined by the faculty on the basis of coursework, exams, and research. Typically, students having a relatively weaker record in one aspect should demonstrate exceptional strength in other measures of achievement, or risk being placed on departmental probation.

3.7.3. Departmental Probation

A student placed on departmental probation shall be given a written explanation of the reasons for this action, along with a reasonable period of time (typically one year) within which the student shall take corrective action or be dismissed from the graduate program.

3.8. Petitions

Students may submit petitions to the Computer Science Department Graduate Program Administrator for deviations from the requirements outlined here. Petition forms are available at the front desk and at the back of this handbook.

4. The Master of Computer Science (MCS)

The MCS is a course-based program for individuals who seek to enhance their careers with advanced knowledge of computer science. The requirements described here are in addition to the University-wide requirements for master's degrees described in the *Manual of Rules and Regulations of the Graduate College*, Section X.

4.1. Course Requirements

The MCS requires a minimum of 32 semester hours of coursework beyond the bachelor's degree.

4.1.1. Theory Requirement

All MCS students are required to take one of the following for a total of 3 semester hours:

- 22C:131 Limits of Computation
- 22C:135 Theory of Computation
- 22C:231 Design and Analysis of Algorithms

4.1.2. Systems Requirement

All MCS students are required to take one of the following courses for a total of 3 semester hours. New or alternative offerings may, from time to time, be designated as also satisfying this requirement.

- 22C:160 High Performance Computer Architecture
- 22C:162 Advanced Operating Systems
- 22C:166 Distributed Systems and Algorithms
- 22C:168 Computer Communications
- 22C:181 Formal Methods in Software Engineering
- 22C:185 Programming Language Foundations)
- 22C:186 Compiler Construction

4.1.3. Colloquium Requirement

All MCS students must accumulate at least 2 semester hours of 22C:399, the CS colloquium series. Students enrolled in 22C:399 are graded S/U. The Department will offer approximately 10 talks each semester; of these, students must attend at least seven talks to get a satisfactory score for the course. (Note: if, for some reason the Department schedules significantly more or significantly less than 10 talks in a semester, the required number of talks that must be attended may be changed for that particular term.)

4.1.4. Elective Courses

MCS students should fill the remaining semester hours with a combination of directed readings, CS graduate courses, and non-CS graduate courses approved by their advisor and subject to the following constraints:

- at least 6 courses (18 semester hours) of “didactic”¹ CS graduate-level courses;
- at most 1 CS graduate-level “readings” course (22C:197 or 22C:290); and
- at most 2 non-CS graduate-level technical courses (approved by advisor).

¹ Any CS course numbered 22C:120 or greater, excluding 22C:191, 22C:197, 22C:290, 22C:299, and 22C:399

4.2. Software Engineering Subtrack

The Computer Science Department, with the Electrical and Computer Engineering Department, offers a subtrack in software engineering within the MCS program. Students completing 22C:180 (Fundamentals of Software Engineering), 22C:181 (Formal Methods in Software Engineering), 22C:182 (Software Engineering Languages and Tools), and 22C:183 (Software Engineering Project) receive a special designation on their transcript. See the Graduate Program Administrator to file the appropriate paperwork when applying for the degree at graduation.

4.3. Residency Requirement

The Graduate College has additional explicit residence requirements that must be satisfied in order to obtain the MCS. For full details, see the *Manual of Rules and Regulations of the Graduate College, Section X (D)*.

4.4. Academic Standing

To remain in good standing, an MCS student must demonstrate academic progress in their coursework. The faculty will meet each spring to review all aspects of each student's progress towards a degree, with student standing ultimately determined by the faculty.

4.4.1. MCS Plan of Study Form

Each student is responsible for maintaining an up-to-date MCS Plan of Study document on file with the Graduate Program Administrator. The MCS Plan of Study is used to track student progress throughout the program, and should be updated each semester in collaboration with the student's advisor. It is also used to prepare the Graduate College's Plan of Study summary document when preparing for graduation.

4.4.2. Departmental Probation

A student placed on departmental probation² shall be given a written explanation of the reasons for this action, along with a reasonable period of time (typically one year) within which the student shall take corrective action or be dismissed from the graduate program.

4.5. Petitions

Students may submit petitions to the Graduate Program Administrator for deviations from the requirements outlined here.

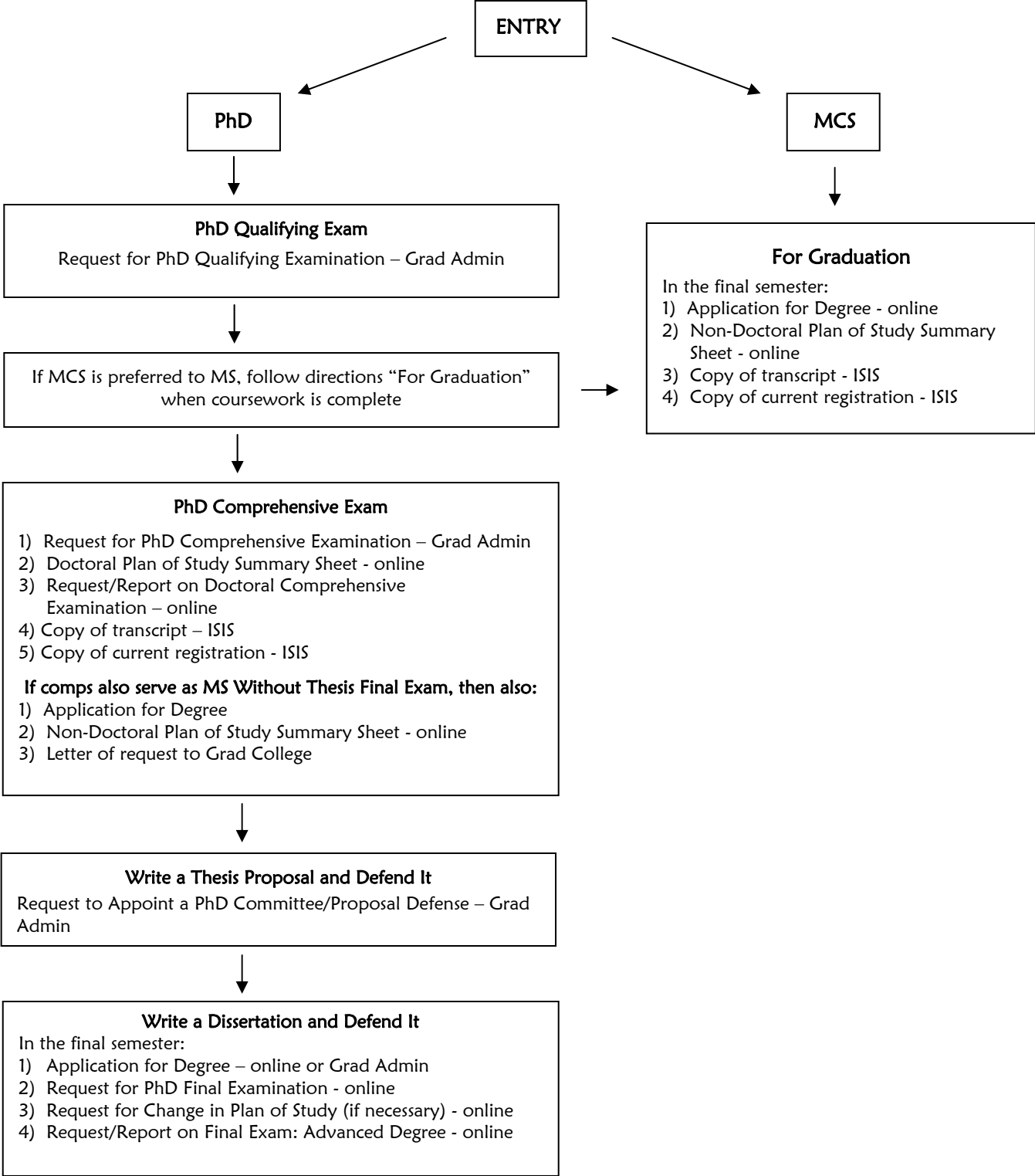
5. Academic Integrity

Work outside the classroom on assignments and programming projects plays a particularly important role in the learning process in computer science. It is essential that each student's work reflect his or her own effort. Our department treats cheating seriously. Instructors retain considerable latitude in the penalties they may invoke. For a first offense, an instructor can fail the student in the course. For a second offense, the Department can expel the student from the program. All offenses must be reported to the Department Chair. Students involved in research should understand that it is essential to give proper credit for other people's ideas and work when they present them in their own writing. The University's policy on ethics in research is included in Chapter 27.6 of the *Operations Manual* and should be thoughtfully considered by any student undertaking research, as well as Chapter IX Student Rights and Responsibilities included in the Student Academic Handbook (http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml#1), published by the College of Liberal Arts and Sciences.

² The Graduate College mandates that each student maintains a minimum cumulative GPA of 2.75 or risk being placed on Graduate College probation (for details, see the *Manual of Rules and Regulations of the Graduate College*).

Paperwork Flowchart for CS Graduate Degrees

NOTE: Graduate College deadlines are earlier than expected: in March for May graduates, in June for summer graduates and in October for December graduates.



PhD PLAN OF STUDY

Department of Computer Science

Name: _____ ID Number: _____

Date: _____ Advisor: _____

Research Area: _____

PhD Matriculation Date: Fall Spring Summer 20__

PhD Qualifying Exam: Passed Expected Fall Spring 20__

PhD Comprehensive Exam: Passed Expected Fall Spring Summer 20__

PhD Proposal Defense: Passed Expected Fall Spring Summer 20__

PhD Expected Completion Date: Fall Spring Summer 20__

Course	Term	Hours	Grade	Requirement
22C:231		3 sh		Design and Analysis of Algorithms
22C:135		3 sh		Theory of Computation
22C:		3 sh		Systems and Software
22C:		3 sh		Networks and Distributed Systems
22C:		3 sh		Programming Languages and Compilers
		3 sh		Cognate
		3 sh		Cognate
		3 sh		Cognate
22C:399		1 sh		Colloquium
22C:399		1 sh		Colloquium
22C:399		1 sh		Colloquium
22C:399		1 sh		Colloquium

List additional 41-44 credit hours planned or taken.

Course	Term	Hours	Grade		Course	Term	Hours	Grade

Notes:

Signature of Candidate

Date

Signature of Advisor

Date

REQUEST FOR PhD QUALIFYING EXAMINATION

Department of Computer Science

Name: _____ ID Number: _____

Advisor: _____

Research Area: _____

PhD Matriculation Date: Fall Spring Summer 20__

PhD Expected Completion Date: Fall Spring Summer 20__

Requested Qualifying Exam Date: Fall Spring 20__

Signature of Candidate

Date

Signature of Advisor

Date

Please attach qualifying exam material for distribution to examination panel.

~ ~ ~ ~ ~ Do not write below this line ~ ~ ~ ~ ~

Exam Date: _____ Result: Satisfactory Unsatisfactory

Examination Panel:

	Name	Rank	Signature
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
Advisor	_____	_____	_____

Recommendations:

REQUEST FOR PhD COMPREHENSIVE EXAMINATION

Department of Computer Science

Name: _____ ID Number: _____

Advisor: _____

Research Area: _____

PhD Matriculation Date: Fall Spring Summer 20__

PhD Qualifying Exam Passed: Fall Spring Summer 20__

PhD Expected Completion Date: Fall Spring Summer 20__

Comprehensive Exam Date and Time: _____

Comprehensive Exam Room: _____

Comprehensive Exam Committee: (a minimum of five members is required)

Name	Department & Rank
Chair/Advisor: _____	_____
2.* _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____

* Designated CS co-advisor if advisor is not a CS faculty member

This exam is also serving as my MS (without thesis) final examination
(not available to those already holding UI computer science master's degrees)

Signature of Candidate

Date

Signature of Advisor:

Date

REQUEST TO APPOINT A PhD COMMITTEE/PROPOSAL DEFENSE

Department of Computer Science

Name: _____ ID Number: _____

Advisor: _____

Tentative Dissertation Title: _____

PhD Matriculation Date: Fall Spring Summer 20__

PhD Qualifying Exam Passed: Fall Spring 20__

PhD Comprehensive Exam Passed: Fall Spring Summer 20__

PhD Expected Proposal Defense Date: _____ Fall Spring Summer 20__

PhD Expected Completion Date: _____ Fall Spring Summer 20__

Dissertation Committee: (a minimum of five members is required)

Name	Department & Rank
Chair/Advisor: _____	_____
2.* _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____

Signature of Candidate Date

Signature of Advisor Date

* Designated CS co-advisor if advisor is not a CS faculty member

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## Proposal Defense Report

Proposal Defense Date: \_\_\_\_\_ Result:  Satisfactory  Unsatisfactory

\_\_\_\_\_  
Signature of Advisor                      Date



# PETITION FOR PROGRAM REQUIREMENT EXCEPTION

Department of Computer Science

Students wishing an exception to a departmental program requirement should complete this form, obtain a supporting faculty member's signature, and submit it to the CS Department Secretary in 14 MLH.

Name: \_\_\_\_\_ ID Number: \_\_\_\_\_

Date: \_\_\_\_\_ Email: \_\_\_\_\_@cs.uiowa.edu Phone: \_\_\_\_\_

Program:             Undergraduate     Graduate

Exception(s) Requested: \_\_\_\_\_

\_\_\_\_\_

Justification: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature of supporting faculty and date: \_\_\_\_\_

Attach any supporting documentation (e.g., course syllabi, transcript or grade report, etc.); grad students may submit a current Plan of Study.

~~~~~ **Do not write below this line** ~~~~~

Decision Date: _____ Outcome: Approved Rejected

Program Director Signature: _____

Notes and/or Reason for Rejection: