Computer Science Graduate Program Rules and Procedures
Michigan Technological University

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Contents

1 Introduction

The purpose of this handbook is to provide students pursuing the MS or PhD in Computer Science (CS) with an overview of the rules governing those programs. Note that the rules and procedures contained in this handbook are subject to change. Please see the Graduate Director of the Department of Computer Science for updates.

2 PhD Policies and Procedures

2.1 Admission Requirements

Applicants should have a BS or MS degree in computer science or a related field (exceptions may be made for well-qualified applicants from other disciplines). PhD program applicants should have a minimum GRE Verbal score in the 50th percentile, a minimum GRE Quantitative score in the 85th percentile, and a minimum GRE Analytical Writing score of 3.0. A TOEFL score at least 79 (IBT) or 6.5 (IELTS) is required for international applicants whose native language is not English. A TOEFL score at least 94 (IBT) or 7.0 (IELTS) is required for financial support. All applications, except for Michigan Tech graduates, *must* submit GRE test scores.

2.2 Choosing an Advisor

Each student will have an Advisor who is a member of both the MTU graduate faculty and the Computer Science tenured/tenure-track faculty. The Advisor will have the primary responsibility for supervising the student's research project and for directing the student's academic and professional development.

Each student will have an Advisory Committee consisting of the student's advisor and at least three additional members. Two of the three may be from the Department of Computer Science. At least one committee member must be from outside the CS department. All Advisory Committee members from MTU must be members of MTU's Graduate Faculty. The Advisory Committee members will be selected by the Advisor in consultation with the student. An advisor should be chosen during the first year of residence. Until the advisor is chosen, the student will be advised by the CS Graduate Director.

2.3 Courses

The PhD student must complete

C1) An approved MS program in computer science,

C2) A PhD credit requirement, and

C3) A graduate-level breadth requirement.

To complete the MS program requirement the student may complete one of the options listed in Section 3, or complete an approved MS at another university. To complete the PhD credit requirement a student must complete a total of 30 credits of course work and/or *CS6990: Dissertation Research* beyond the MS program requirement. These courses must be approved by the Advisory Committee on the *Preliminary Program of Study* form[1].

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[1]This form is not required by graduate school. Use the *Degree Schedule* form as replacement but it is only for internal review by the Advisory Committee and the Graduate Director.

2.3.1 Graduate-level Breadth Requirement

To complete the *graduate-level breadth* requirement, each PhD student must satisfactorily pass five courses from the areas listed below. A maximum of one course per area is allowed.

Compiler Optimization: CS5130

Parallel Algorithms: CS5331

Operating Systems: CS5411, CS5441

Computer Architecture: CS5431

Networks: CS5461, CS6461

Computer Graphics: CS5611

Human-Computer Interaction: CS5760

Artificial Intelligence: CS5811

Non-CS Graduate Course: Requires approval

Courses not included on this list require the approval of the student's advisory committee and the Graduate Director to count toward the graduate-level breadth requirement. Satisfactory completion of the graduate-level breadth requirement involves attaining an A in three of the five chosen courses and at least an AB in the other two.

Individual courses may be used to satisfy more than one of the above three course requirements in one of two ways. First, a 5000- or 6000-level course may count toward requirements C1 and C3. Or second, a 5000- or 6000-level course may count toward requirements C2 and C3. A single course may not count toward all three requirements.

The Advisory Committee approves the required courses by first signing the *Preliminary Program of Study* and later approving the *Degree Schedule*. The *Preliminary Program of Study* form should be turned in during the second semester of residence. It is recommended that students finish all of their course requirements within the first two years of enrollment in the graduate program in Computer Science. Note that the graduate-level breadth requirement must be completed as part of the Comprehensives described in the next section.

2.3.2 Credit Transfer

A maximum of six course credits taken as a graduate student at other colleges or universities may be accepted for graduate credits towards PhD/MS of Computer Science at Michigan Tech. If these credits were taken before enrollment at Michigan Tech, a request for transfer credit should be made during the students first semester on campus. Transfer credits must be

A. approved by a CS faculty member who teaches an equivalent course and by the graduate director, or by the graduate committee and by the students advisory committee;

B. 10 years within the students first semester at Tech;

C. with grade B or better;

D. and taken from an accredited US university or an international university accepted by the graduate committee.

2.4 Comprehensive Examination

The comprehensive examination is given to determine the general knowledge appropriate to the student's program and the student's ability to use this knowledge. The exam has two components: the Technical Qualifying Evaluation and the Research Qualifying Exam (RQE).

2.4.1 Technical Qualifying Evaluation

The Technical Qualifying Evaluation has two components: coursework and the TQE exam. The coursework requirement is met by completing the graduate-level breadth requirement described in Section 2.3.1. The TQE exam has two component exams, one in *Computation Theory* and one in *Analysis of Algorithms*. Each component exam is a three-hour written exam.

Each component exam will be both written and graded by two graduate faculty chosen by the CS Department Graduate Director. The exams are offered immediately before the spring and fall semesters each year. A student who receives an A in CS5311 is exempt from taking the exam in Computation Theory, and a student who receives an A in CS5321 is exempt from taking the exam in Analysis of Algorithms.

The topics covered on each of the exams are specified via a syllabus that is available from the Graduate Secretary. Preparation for both exams should include the successful completion of the following courses: CS5311 and CS5321. Although the exams are not specifically tied to a course, these courses provide excellent preparation for the material contained on each exam syllabus.

Each student has up to two attempts to pass the TQE exam. All students *must* take the entire TQE exam (both components) during the first attempt, which must occur at the end of the first year of enrollment in the PhD program. A student may earn one of the following grades on each component exam: *pass*, *marginal*, or *fail*. Each student must earn a *pass* on one exam and at least a *marginal* on the other exam in order to pass the entire TQE Exam. Figure 1 summarizes the possible outcomes and requirements after a student's first attempt at the TQE exam. If a component exam is taken multiple times, the *highest* grade of the two attempts is counted. If a second attempt to pass the TQE exam is required, a student *must* make that attempt during the next offering. Thus, each student has two opportunities in 1.5 years from enrollment in the PhD program to pass the TQE exam.

		Algorithms		
		pass	*marginal*	*fail*
	pass	A	A	C
Theory	*marginal*	A	D	C
	fail	B	B	E

(a) Matrix

A) Successful completion of Qualifier.
B) Retake Theory Exam.
C) Retake Algorithms Exam.
D) Retake either exam.
E) Retake both exams.

(b) Explanation

Figure 1: Possible Qualifier Outcomes

Requests for a time extension due to extenuating circumstances will be considered on an individual basis and must be submitted to the Graduate Director in a timely fashion. The Graduate Committee will determine if a time extension is to be granted. Note that students not ready to complete CS5311 and CS5321 within the

first year will be granted a time extension in order to complete these courses. These students must submit their time-extenstion request to the Graduate Director during their first year of PhD studies.

Students with a BS or MS in CS or a closely related field have 1.5 years from the start of the first semester of enrollment in the CS PhD program to pass the TQE exam. Students without a degree in a field closely related to CS will be given 2.5 years, but still only two attempts, to pass the TQE exam.

2.4.2 Research Qualifying Exam

The Research Qualifying Exam (RQE) is primarily given to determine the student's ability to successfully conduct research in Computer Science. The RQE is an oral exam over a report written by the student that describes an original research project conducted by the student. The impact and scope of the result is not a primary factor in assessing the student's ability. Instead, the exam is intended to determine whether the student is able to work independently, think creatively, apply scientific principles, and to present and defend their work to the computer science community.

The RQE is conducted by three tenured and tenure-track faculty from the Department of Computer Science. A student may submit a list of suggested faculty for the RQE committee. The Director of Graduate Studies will ultimately assign an RQE committee taking into account the student's preferences, but also balancing faculty work loads and responsibilities. For students who have already formed a dissertation committee at the time of the exam, it is expected the CS faculty on the dissertation committee will also serve as the RQE examination committee.

Report   The report should be in a format similar in content and scope to a conference or journal publication in the field. The report must be authored by the student and describe original research performed primarily by the student with input from the research advisor. The student may seek comments on the written report from the research advisor and from the MTU writing center. An MS thesis on research in computer science or a related field is an acceptable written report. The report must be provided to the RQE committee at least two weeks prior to the the oral examination.

Letter   The student's research advisor should provide the examination committee with a letter that describes the manner in which the student conducted the research and give an appraisal of the quality of the research. The letter should contain an assessment of whether the advisor believes the student can successfully complete a PhD dissertation.

Exam   The student will give a public oral presentation of the research results. The presentation must be announced two weeks prior to the exam. The committee determines the outcome of the exam and provides a written result to the student. The result can be *pass*, *conditional pass*, or *fail*. A *pass* indicates the student has completed the requirement. The committee may give a *conditional pass* when there are deficiencies that must be addressed. A conditional pass will be accompanied by a written list of conditions that must be met by the student in order for a *pass* to be awarded. A *fail* indicates that the student has failed the RQE. For students who complete their Masters thesis at MTU, it is expected that the RQE exam will be given at the same time as the thesis oral presentation.

For students who enter the PhD program without an MS, it is expected that the student will pursue the thesis option for the MS and the written document provided to the RQE committee will be the thesis. Students who enter without an MS may take up to nine credits of CS5990 to conduct research and develop a written report for the RQE.

Background on Admission to PhD	FALL	TQE	SPR	TQE	FALL	TQE	SPR	TQE	FALL	TQE	SPR	TQE
BS in CS/Related	5321		5311	●			■ RQE		◆			
MS in CS/Related	5321		5311 RQE	●	RQE*	■	◆					
Other BS or MS					5321		5311		■		RQE	◆

●   Take TQE Exam

■   TQE Deadline

◆   RQE Deadline

Figure 2: Expected Timeline to Completion of TQE Exam and RQE (* needs approval)

Deadline   A student who enters the PhD program with a BS in Computer Science or a related field has two years from the start of the first semester of enrollment in the PhD program to complete the RQE. A student who enters with an MS in Computer Science or a related field has one year or one year and a semester with approval of the student's advisory committee to complete the RQE. A student with a BS or MS in an unrelated field has three years to complete the RQE.

Figure 2 gives the expected timeline to completion of the Technical Qualifying Exam and Research Qualifying Exam.

After completing both the Technical Qualification Evaluation and the Research Qualifying Exam, the student should submit the *Report on Comprehensives* form to the Graduate School.

2.5 Dissertation Proposal

The Dissertation Proposal Defense should be completed within 1 year of completing the Comprehensives and *must* be completed within 2 years of the Comprehensives. Requests for extensions to this limit must be submitted in writing the the Graduate Director.

2.5.1 Dissertation Proposal Defense

The Dissertation Proposal Defense involves preparing a written document and then presenting it orally in an open, public forum. The date and time of the proposal shall be announced at least two weeks in advance and the final version of the written proposal must be given to all Advisory Committee members at least two weeks in advance of the oral presentation. Furthermore, a copy of the proposal must be available in the CS Department office at least two weeks in advance of the oral presentation.

After the dissertation proposal is presented, the Advisory Committee must decide if the student is prepared to proceed to the dissertation research project. A 75% vote of *pass* is required for the student to pass the proposal. After passing the Dissertation Proposal Defense, the student should submit the *Approval of Dissertation Proposal* form to the Graduate School.

2.6 Dissertation Defense

2.6.1 Scheduling of the Final Oral Examination

Once the dissertation is written and the Advisory Committee's suggestions and comments have been incorporated by the student, it is time for the final oral examination. Four weeks prior to the final oral examination the student must give each member of the Advisory Committee a copy of the final dissertation. After each committee member has reviewed a copy of the dissertation and has determined that the copy is of oral exam quality, each should sign the *Scheduling of Final Oral Examination* form. This form and a copy of the dissertation are due in the Graduate School office two weeks before the final oral examination. After the *Scheduling of Final Oral Examination* form has been signed and at least two weeks before the final oral exam, a copy of the dissertation must be available in the CS Department office.

2.6.2 Final Oral Examination

The final oral examination is an open, public presentation of the student's research and research results. After the presentation, anyone in the general audience including members of the Advisory Committee may ask questions. Then, the general audience will be excused; those remaining will be Advisory Committee members or CS Faculty. Anyone in this restricted audience may ask questions. Finally, everyone is excused except the Advisory Committee and the student. Members of the Advisory Committee may ask further questions concerning the research and the student's PhD program.

Finally, the student is excused, and the Advisory Committee must decide if the student passes or fails the final examination. A student passes the final oral examination if no more than one member of the Advisory Committee dissents and if the student addresses, in writing, the dissenting member's concerns to the satisfaction of the Advisor and the Dean of the Graduate School. The committee may make its passing contingent upon changes being made in the dissertation.

If the student fails, s/he may take the final examination a second time. A student must pass the final examination within two tries in order to continue in the program.

After passing the oral examination, the student submits to the Graduate School the *Report on Final Oral Examination*.

2.7 PhD Student Annual Review

The purpose of the PhD student annual review procedure is to encourage and motivate PhD student research, and provide additional mentoring for graduate study.

The PhD review procedure consists of the following main steps:

1. An annual progress report and other materials completed by the PhD student and advisor (if one exists) will be requested. Dates vary by year, but the deadline is typically in the middle of the spring semester.

2. Review of the progress report by the Graduate Committee (Note, this is separate from an advisor's evaluation/grade for research credit submitted each semester.)

3. Notification letter to the student and advisor by early April.

2.7.1 Review Criteria

Minimum requirements are that the student must comply with all academic rules, regulations, and timelines set forth by the Graduate School and the Department of Computer Science. These include, but are not limited to,

- maintaining acceptable cumulative grade point average (GPA),

- formation of an advisory committee,

- filing the *Preliminary Program of Study* form [2] and *Degree Schedule* form,

- passing Technical Qualifying Evaluation (TQE) Exam and Research Qualifying Exam (RQE),

- completing PhD breadth (TQE course) requirement,

- submitting a dissertation proposal, and

- passing the dissertation oral defense,

all within allowable time limits.

In addition to meeting minimum requirements, students must demonstrate *Satisfactory* performance, based on faculty expectations. To provide guidance to students and faculty, descriptions of ranges of *Satisfactory* progress for students entering with a related Bachelor's degree or with a related Master's degree are provided in Table 1 and Table 2, respectively.

B+1	The student is expected to find an advisor, to complete several core courses, to file the *Preliminary Program of Study* form, to pass TQE exam, and to start their research
B+2	The student is expected to complete PhD breadth requirement and RQE. Some progress in research should be documented (for instance, submission of a paper to a conference or journal).
B+3	The student must have tangible research results, such as refereed publications in recognized outlets. The student should submit their dissertation proposal. The student should submit, in the annual review report, a research plan including the goal of publications before dissertation defense, which is agreed by their advisory committee.
B+4	The student must have made substantial progress towards completion of the PhD dissertation. There should be evidence that the candidate has produced original, significant research contributions. Lack of publications is an indicator of inadequate progress.
B+5	Expected to complete and defend dissertation.

Table 1: Satisfactory progress guidelines for students entering with a related Bachelor's degree (The notation "B+i" means the ith year after completing the Bachelor's degree)

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[2]Use the *Degree Schedule* form

M+1	The student should find an advisor. The student should file the *Preliminary Program of Study* form, (nearly) complete PhD breadth requirement, TQE exam and RQE. Progress in research should be documented (for instance, substantial work targeting a conference or journal submission).
M+2	The student must have tangible research results, such as refereed publications in recognized outlets. The student should submit their dissertation proposal. The student should submit, in the annual review report, a research plan including the goal of publications before dissertation defense, which is agreed by their advisory committee.
M+3	The student must have made substantial progress towards completion of the PhD dissertation. There should be evidence that the candidate has produced original, significant research contributions. Lack of publications will be an indicator of inadequate progress.
M+4	Expected to complete and defend dissertation.

Table 2: Satisfactory progress guidelines for students entering with a related Master's degree (The notation "M+i" means the ith year after completing the Master's degree)

The graduate committee, in consultation with a student's major advisor, will rate the student based on the above criteria. A student will likely be rated *Needs Improvement* if they fall below these ranges, and they will likely be rated *Unsatisfactory* if they fall significantly below these ranges. It is important to note however, that the ranges provided are only guidelines and they should be adjusted accordingly based on each student's individual circumstances. For example, a student may join in mid-year, a student may come with a different background and need additional foundation courses, a student may initially focus on research and defer course work, a student may carry significant teaching duties, or a student may go on an internship. The actual evaluation will take into account all the information available to the graduate committee.

A student who has been a graduate teaching assistant (GTA) will also be evaluated based on their GTA performance. An *Unsatisfactory* rating by the students in their classes or the faculty mentor might lead to an *Unsatisfactory* rating in the annual evaluation. In addition, a student is encouraged to serve the department, college, university and the community, for example, to assist the department leading department tours at Open Houses and Orientation, to teach programming to K-12 students with Copper Country Programmers, to serve on Graduate Student Government, etc.

2.7.2 Student and Advisor Reports

The student is required to prepare and file the materials listed below by the announced deadline, typically in the middle of the spring semester. Failure to submit the required materials will result in a rating of *Unsatisfactory* for that year. Complete and accurate documents are critical for a successful PhD review.

- An annual progress report describing in detail the student's progress towards their PhD degree in the last year, or since the date the student entered the PhD program, whichever is more recent. It includes documenting progress on required milestones, e.g., passing TQE and RQE, completing PhD breadth requirement, submitting dissertation proposal, passing dissertation oral defense. For each requirement that has not yet been completed, the student will be asked to provide a tentative date by which they plan to complete that requirement. In addition, this report must include a list of the papers that have been

published, accepted or submitted to conferences or journals, teaching and service activities, limited to the period covered by the annual report. Acceptance ratios or percentages and the total number of submissions should be included for conference papers. The graduate committee will provide a template for the format of the annual report.

- The student's advisor, if they have one, will provide their evaluation of the student's performance as *Satisfactory*, *Needs Improvement*, or *Unsatisfactory* and will provide written comments and attach to the students annual progress report.

- A current curriculum vitae (CV). The CV must include a complete listing (all years) of all the student's published, accepted or submitted conference and journal papers. Acceptance ratios or percentages should be included for conference papers.

2.7.3 Graduate Committee Review and Notification Processes

All PhD students will be evaluated by the graduate committee. After the graduate committee evaluation, each student will receive a rating (*Satisfactory*, *Needs Improvement*, or *Unsatisfactory*) and additional feedback regarding their degree progress. The Graduate Director, on behalf of the graduate committee, will send a written memo to the student and the advisor(s). The memo will include specific feedback explaining the evaluation. In case that a student receives a *Needs Improvement* or *Unsatisfactory* rating, the memo will state which expectations were not met and will provide follow-up actions the student can take to improve to *Satisfactory* performance before the next PhD Student Annual Review. If a student disagrees with their rating, they may provide a written response that will be placed in their departmental record. This statement may include whatever justification or explanation of extenuating circumstances that the student may wish to provide. This statement will be available during future annual PhD reviews.

If a student disagrees with their rating and plans to appeal, they are suggested to follow an internal procedure before starting a formal academic grievance process. They should first consult with their advisor. If both the student and the advisor disagree with the rating, the student and the advisor may meet with the graduate committee to resolve the issue. If the student does not feel that a satisfactory explanation or resolution has been reached after the meeting, they may initiate a discussion with the department chair. If the disagreement cannot be resolved at that time, the student may file a written grievance following the University's academic grievance guideline.

2.7.4 Consequence of an Unsatisfactory or Needs Improvement Rating

A student with an *Unsatisfactory* rating will in general not be eligible for departmental support until all tasks specified in the improvement plan have been successfully completed. A student with a *Needs Improvement* rating will be ranked lower for consideration of departmental support.

Students who are rated as *Needs Improvement* or *Unsatisfactory* must complete the following improvement process (IP) within four weeks of the date when notification of PhD review results was handed out. This deadline applies even if the student is away from campus, e.g., on an internship. Students will complete the improvement process with a mentor. If the student has an advisor, then their mentor will be their advisor. The Graduate Director will be the mentor for students that have not yet identified an advisor. This process can be completed remotely using email and/or conference calls as necessary if the student or their advisor is out of town. All improvement process materials should be submitted to the graduate committee and included in the their departmental record.

1. The student should develop a performance improvement plan with their identified IP mentor. This plan must include steps and a timeline for achieving *Satisfactory* progress over the next year.

2. After the performance improvement plan is approved by the IP mentor, an appointment for the student and their IP mentor will be scheduled to meet with the Department Chair, or designate, to discuss the student's performance and the plans for improving it.

3. The Department Chair will decide whether and when all tasks in the improvement plan of a student are successfully completed. The recommendation by the IP mentor will be taken into account for this decision.

2.7.5 Performance Evaluation and Department Support

The graduate committee reports students' performance to the department chair. The chair makes GTA support decisions using students' performance as a key reference. A *Satisfactory* rating does not guarantee department support.

3 Master of Science Policies and Procedures

3.1 Admission Requirements

All applications, except for Michigan Tech graduates, *must* submit GRE test scores. Minimum scores of 75% quantitative, 3.0 analytical writing and 50% verbal are required. A TOEFL score at least 79 (IBT) or 6.5 (IELTS) is required for international applicants whose native language is not English. A TOEFL score at least 94 (IBT) or 7.0 (IELTS) is required for financial support.

3.2 Course Work Requirements

All MS students must satisfy a theory and breadth requirement. The theory requirement is satisfied by successful completion of CS5311 and CS5321. The breadth requirement is satisfied by successful completion of two graduate or senior-level-undergraduate courses in each of Category A and Category B listed in the Table 3. Within each category, the courses must come from two different areas.

Courses taken to fulfill requirements for an undergraduate degree may be used to fulfill the breadth requirement; however, the credits may not be counted toward the MS degree. For students who have received their undergraduate degree someplace other than MTU, courses taken at one's undergraduate university in the above areas may be used to complete the breadth requirement. The MTU faculty member whose expertise is in the area of the non-MTU course under consideration for the breadth requirement must approve the course as acceptable. Students wishing to count non-MTU courses toward the requirement must complete the "Breadth/Depth Requirement Form" that can be obtained from the Computer Science Graduate Secretary.

Any CS course not listed in Table 3 will not count for graduate credit without the permission of the Graduate Director. Note that students who are deficient in computation theory and are not prepared to take CS5311 may take CS3311 for graduate credit. Approval of the Graduate Director is required before signing up for CS3311. Courses outside the Department of Computer Science may also be counted towards the MS degree with the permission of a student's advisor and the Graduate Director.

Category	Area	MTU Courses
Category A	Languages & Compilers	CS4121, CS4130, CS5130
	Operating Systems	CS4411, CS5411, CS5441
	Computer Architecture	CS4431, CS5431
	Networks	CS4461, CS5461
	Performance Analysis	CS5481
	Cloud/GPU Computing	CS5491, CS4496, CS5496
	Parallel Algorithms	CS4331, CS5331
	Database	CS4425
Category B	Computer Graphics	CS4611, CS5611, CS5631, CS5641
	Software Engineering	CS4710, CS4711, CS4712
	Artificial Intelligence	CS4811, CS5811, CS5841
	Security	CS4471, CS5471
	Human-Computer Interaction	CS4760, CS5760
	Data Analysis	CS4821, CS5821

Table 3: MS Breadth Requirement

3.2.1 Credit Transfer

Please refer to Section 2.3.2.

3.3 Degree Options

Students may select from among three options for completion of the MS degree: the thesis option, the report option, and the course work option. These options are described in detail below.

3.3.1 Thesis Option

The CS Department allows up to 9 of the 30 hours of credit required for graduation to be in CS5990. In addition to completing the 30 hours of credit in approved courses (including CS5990 and up to 3 hours of CS5999 credit though not more than 9 total hours may be taken in CS5990 and CS5999), a student following the thesis option is expected to:

1. Prepare a written plan describing the thesis research.

2. Defend the research plan in an oral seminar presentation or meet with the advisory committee to discuss the research plan. The student and her/his advisor will determine whether the plan is to be presented in a department-wide seminar, or will be presented to faculty members individually.

3. Prepare a final thesis.

4. Defend the thesis in an oral seminar presentation.

The department recommends the following timetable for the milestones along the way to a thesis masters. (Note: items marked with a '+' are milestones; items marked with a '*' are requirements.)

+ find a thesis advisor during the first year in the program.

+ present a thesis plan by the end of the 3rd semester in residence (not counting summers).

* provide a defendable thesis to the entire committee no later than two weeks prior to the thesis defense. In addition, make a copy available in the CS main office for other interested parties.

* defend the thesis in a public forum. This includes two question and answer sessions: the first consists of both students and faculty; the second being closed to the general audience consists of faculty only.

3.3.2 Report Option

The report option allows up to 6 of the 30 hours of credit required for graduation to be in CS5990. In addition to completing the 30 hours of credit in approved courses (including CS5990 and up to 3 hours of CS5999 credit), a student following the report option is expected to: work on a project and present written and oral project reports at the conclusion of the project. Thus, the student should

1. Prepare a written project plan which describes any background work necessary for completion of the project and a project plan.

2. Present the project plan to the advisory committee.

3. Prepare a final report at the conclusion of the project.

4. Defend the project report in a public oral seminar presentation.

The department recommends the following timetable for the milestones along the way to a report masters. (Note: items marked with a '+' are milestones; items marked with a '*' are requirements.)

+ find a major advisor during the first year in the program.

+ present a project plan by the end of the 3rd term in residence (not counting summers).

* provide a "defendable" project report to the entire committee no later than two weeks prior to the oral defense. In addition, make a copy available in the CS main office for other interested parties.

* defend the report in a public forum. This includes two question and answer sessions: the first consists of both students and faculty; the second being closed to the general audience consists of faculty only.

3.3.3 Course Work Option

The course work option requires 30 hours of graded course work. None of the 30 hours of credit required for graduation may be in CS5990 and no more than 3 hours of CS5999 credit may be applied to the 30-hour requirement. Course work option students have the graduate director as their advisor.