

Toyota Technological Institute
at Chicago



Student Academic
Program Guide

Contents

Introduction to the Program	3
Academic Calendar	3
Financial Support	4
Program Prerequisites	5
Advisors	7
Residency Requirements	7
Student Status: Defined	8
Student Progress/ Academic Evaluation	8
Grading Policy/ Incompletes/ Withdrawals	9
The Quarter System	9
Courses and Requirements	10
List of Courses	10
Registering for Courses	10
Pre-Qualifying Candidate Requirements	11
Pre-Qualifying Candidates' Course Requirements	11
Timeline and Requirements Chart for Pre-Qualifying Candidate Period	12
Course Exemptions	12
Transfer Student Course Requirements	12
Programming Requirement	13
Qualifying Exam	13
Master's Diploma	14
Ph. D. Candidate Requirements	15
Candidacy	15
Research Advisor	15
Ph.D. Candidate Course Requirements	16
Timeline and Requirements Chart for Ph.D. Program	17
Doctoral Thesis and Defense	18
Thesis Publication Requirements	19
Doctoral Thesis Handbook	19
Ph.D. Degree Completion	19
Doctoral Diploma	19
List of Documents and Forms	20

Introduction to the Program

The Ph.D. Program at the Toyota Technological Institute at Chicago leads to a doctorate in computer science, and focuses primarily on:

- Machine Learning
- Algorithms & Complexity
- Computer Vision
- Speech Technologies
- Computational Biology

TTIC is proud of its Ph.D. Program, designed to prepare students for academic or research careers. To complete the Ph.D. Program a student must make an original and significant contribution to the field of computer science and this contribution must be described in a Ph.D. Thesis. In addition to the Ph.D. Thesis, there are course and examination requirements for the completion of the Program. These requirements are described in this Student Academic Planning Guide.

Students should keep in mind that these formal requirements are actually only a part of obtaining a Ph.D. degree. The main component of a Ph.D. program is the intangible process by which the student learns to do research and become a part of the academic community. Progress in the program will be judged by a student's progress in research as well as their progress in satisfying the formal requirements.

Academic Calendar

2011 AUTUMN QUARTER	
TTIC Orientation	Mon September 19
Registration	Wed September 22
Quarter Begins	Mon September 26
Thanksgiving	Fourth Thurs & Fri in Nov.
Quarter Ends	Sat December 10

2011 WINTER QUARTER	
Quarter Begins	Mon January 03
Martin Luther King, Jr. Day	Third Mon. in January
Break	Fri February 10
Quarter Ends	Sat March 17

2012 SPRING QUARTER	
Quarter Begins	Mon March 26
Memorial Day	Last Monday in May
Quarter Ends	Sat June 9

2012 SUMMER QUARTER	
Quarter begins	Mon June 18
Independence Day	Wed July 04
Quarter Ends	Sat August 25

Financial Support

Tuition is \$30,000.00 per year.

All Ph.D. students at TTIC are expected to receive financial support that covers tuition and living expenses. This support is typically provided by individual faculty members who “sponsor” that student.

Part of the admissions process involves securing an agreement with a faculty member willing to sponsor an applicant. Once a faculty member has agreed to sponsor an applicant, that faculty member has a responsibility to that student should they decide to attend TTIC. Students are supported with a monthly stipend, provided the student maintains fulltime enrollment status at the institute and remains in good academic standing. Students’ acceptance letters include the amount and duration of support, however, continued support for prolonged enrollment can not be guaranteed, although every effort will be made by TTIC to maintain support for worthy students, independent of temporary funding conditions of the particular sponsoring faculty.

Financial assistance such as scholarships and grants received by a student from other sources will reduce the amount of stipend provided by the Institute, in the ratio of 2:1. In other words, for every \$2.00 received from outside sources, the Institute scholarship provided that student is reduced by \$1.00.

Program Prerequisites

Program Entrance Requirements

A student entering the Ph.D. program is expected to have completed a bachelor's degree (or similar degree for international students) in computer science or a related field. Applicants who hold a Ph.D. degree from another institution will not normally be admitted.

Pre-Requisites

Graduate education at TTIC builds on ideas and material learned during undergraduate education. Specifically, we expect the students are familiar and comfortable with the topics listed in the table below. These subjects are considered a pre-requisite for graduate education and for required classes at TTIC.

<i>Pre-Requisite Undergraduate Level Requirements</i>			
Subject Name	Detail	Suggested Text	Suggested Univ. of Chicago Course
Discrete Math	Sets, functions and relations; boolean/logical arithmetic; modular arithmetic; basic graph concepts; basic combinatorics including inclusion/exclusion and generating functions.	Discrete Mathematics and Its Applications, 6th Edition/ Kenneth Rosen, McGraw-Hill 2007. Chapters 1- 10 -Or- Discrete Mathematics / Lovasz, Pelikan and Vesztergombi, Springer 2003. Chapters 1-13	CMSC 27100
Algorithms	Time and memory complexity analysis; sorting and searching; basic data structures: linked lists, trees, balanced trees, heaps; paradigms: greedy methods, recursion, divide and conquer, dynamic programming; basic graph and network algorithms: BFS, DFS, MST, shortest path algorithms, max flow	Introduction to Algorithms, 3rd Edition / Cormen, Leiserson, Rivest and Stein, MIT Press 2009. Chapters 1-16 and 22-26, excluding starred Sections.	CMSC 27200
Probability	Probability space, events, random variables, independence; probability density function, mass function and cumulative density function; discrete and continuous probability distributions and random variables; mean, median, variance, moments; Bernoulli, binomial, multinomial, geometric, Poisson, Gaussian, multivariate Gaussian and exponential distributions; Convergence in probability and almost sure convergence*; Laws of Large Numbers; Central Limit Theorem	Probability / Jim Pitman, Springer 1993	STAT 25100
Linear Algebra	Vector spaces, matrices, linear transformations; elimination, inverse, and systems of equations; null spaces and image space; linear span, independence, basis, change of basis; orthogonality, projection, and the Gram- Schmidt procedure; unitary, rotation and permutation matrices; eigenvalues, eigenvectors and determinants; inner products and norms; semi-definite	Introduction to Linear Algebra, 4th Edition / Gilbert Strang, Wellesley- Cambridge Press 2009 (video lectures using this text are also available online.)	MATH 25000

	matrices; LU decomposition; matrix similarity and Jordan normal form; diagonalization and exponentiation		
Programming	Familiarity with at least one general-purpose high-level procedural or object-oriented language such as C, C++ or Java; Data types; Variable scope; Pass by value/ by reference; Modularity, abstraction and reuse; Iteration and recursion		CMSC 15100+ 15200 or CMSC 10600
<i>*Indicates topics not covered by the recommended text.</i>			

Upon entering the graduate program, the student will report on a [New Student Prerequisite form](#) (provided at orientation,) how they fulfilled each of the topics in the table above, and discuss their background in these subjects with the Director of Graduate Studies (DGS) and with their advisor. Students who are missing a class or do not feel comfortable with some of the topics mentioned, should study the required material, either independently from a textbook (as recommended by TTIC) or online course, or by taking the corresponding UoC course.

Based on the recommendation of the DGS and the advisor, the faculty may choose to REQUIRE that a student either take a course at the University of Chicago to make up for a missing subject, or study the material independently and pass an appropriate exam. In such cases, the students will be notified of this requirement during their first quarter at TTIC, and the requirements should be completed within a year.

English Language Pre-Requisites for International Students:

International students who have not studied for at least one academic year within the last five years in a school in the United States, the United Kingdom, Ireland, Australia, New Zealand, or an English-medium university in Canada or South Africa, must take the Test of English as a Foreign Language (TOEFL) in order to apply to TTIC.

To be successful in the academic program, it is essential that each graduate student is competent in understanding and communicating in English. TTIC's assessment of English competency is made based on two factors: 1) the TOEFL score and 2) student interviews. The minimum TOEFL score to be considered for admission is 85 on the internet-based test (iBT) and 563 on the paper-based test (PBT).

Please note that the computer-based test results are no longer valid (see the TOEFL website for more information).

Please understand that these are only absolute minimum requirements considered. English competence, evaluated based on the TOEFL score and an interview, is also factored into all final admissions decisions at TTIC, and typically significantly higher scores are needed in order to gain admittance and succeed in the program.

Students whose first language is not English may be eligible to enroll in English as a Second Language classes and be partially reimbursed by TTIC. Details of this policy may be found on the TTIC Intranet under 'Student Policies'.

Advisors

Interim Advisor

Upon entry to the program the Institute assigns each student, in consultation with the student, an interim advisor. Students' admission letters will include this assignment.

Research Advisor

Before a student takes the qualifying exam (no later than the end of the second year) the student must choose a regular research advisor.

The research advisor must be tenured or tenure track TTIC faculty. A student may also choose to designate a University of Chicago tenured or tenure track faculty member to be their primary research advisor and a (tenured or tenure track) TTIC faculty member as a secondary advisor. In such cases, the TTIC secondary advisor shall bear all the responsibilities outlined here for the research advisor, including bearing the primary responsibility for ensuring the student is engaged and progressing in the Ph.D. program.

The advisor relationship will be formalized by the [Research Advisor Declaration form](#), signed by both the student and the advisor. In the case of two research advisors (University and TTIC), a form must be completed for both advisors. The form will be reviewed and signed off on by the TTIC Director of Graduate Studies (DGS). The student submits this completed form to the Registrar.

The relationship between a student and their advisor is a central aspect of the Ph.D. program. This relationship requires the ongoing consent of both parties; either party can withdraw from a Ph.D. research advising relationship by notifying the Chief Academic Officer (CAO). If a student has difficulty finding an advisor, they should seek the help of the DGS or CAO. The DGS is responsible for verifying that each graduating student has fulfilled the Ph.D. requirements. The DGS and the CAO shall be notified of all changes in advisors.

When the advisor of a student is also the DGS, then any action or approval that is normally required by the DGS will instead be required by the CAO.

Residency Requirements

TTIC's degrees are residence degrees in the sense that a major portion of work must be done on campus in the Institute community with the faculty and other graduate students.

The satisfactory completion of the Ph.D. degree requires the student to:

- 1) Be in residence as a full-time regular student for all required core & elective courses;
- 2) Register for three consecutive academic quarters (example: Autumn, Winter, and Spring) for the first two years of study.

To be eligible for any degree, a student must complete the residency requirements as stipulated above.

Student Status: Defined

The following categories define the status options for students enrolled at TTIC:

- **Pre-Qualifying Candidate-** Student in the Graduate degree program leading to a Ph.D. degree.
- **Ph.D. Candidate-** Student who has completed the Qualifying Exam, fulfilled seven core course requirements, the programming requirement, and whose advisor has agreed to begin supervising thesis efforts.
- **Provisional-** This status refers to a level of academic standing between good standing and academic dismissal. Once Provisional, a student is allowed to continue enrollment at TTIC, but is no longer in good standing. It serves as a serious warning that the student's academic performance needs improvement, alerting him or her that they are in jeopardy of being dismissed from the program. The advisor will alert the student if faculty has determined they are Provisional and they will be advised of some directives to help the student address concerns that are impacting their academic performance, and a plan may be given to the student with the aim of improved academic success. In addition, he or she may be required to participate in some academic enhancement activities.
- **Student-at-Large-** Registered for special study but not a candidate for a TTIC degree. Students from TTI Japan taking courses at TTIC are considered Students-at-Large.
- **Full Time Enrollment Status-** This status is accorded to all students enrolled who undertake an academic workload consisting of any (advisor-approved) combination of courses, work experience, research or special studies that is considered a full-time workload.

All students enrolled in the TTIC degree program are expected to be in full-time status at all times while enrolled at TTIC.

Student Progress/ Academic Evaluation

To ensure students are on track to meet the requirements necessary to progress through the program, regular student progress reviews are conducted by faculty.

At the end of each quarter, students complete a review of their work in the previous quarter and a brief self-evaluation of their academic performance and submit an academic/research plan for the upcoming quarter, using the [Student Data form](#) on the Intranet. This plan must be discussed with and approved by the student's advisor.

Twice a year, at the beginning of the Fall and Spring quarters, the faculty will hold a review and evaluation meeting to discuss each student's standing and success in the program.

The faculty will discuss and determine for each student whether that student is making sufficient progress in academic goals to continue in the Ph.D. Program. In the event that a student is not meeting their academic obligations, they may be notified of being placed on Provisional status, or they may be notified that they are not permitted to continue with the program. In any case, a **letter of evaluation** is written to each student by their advisor, based on the discussion in the meeting, to be signed by the advisor and the Director of Graduate Studies. This will take place from the first year of study until a student completes (or leaves) the program.

The letters will be distributed to each student, along with [Confirmation of Receipt form](#) that **students must sign and return to Registrar within ten days of letter distribution.** Registration for the next quarter may be restricted until the Confirmation of Receipt form has been returned to the Registrar.

Grading Policy/ Incompletes/ Withdrawal

Grading Policy

All core courses as identified in the Ph.D. curriculum require a letter grade. For elective courses, pass/fail grades are allowed, and, if the instructor is not using a grade system, it is not required that the student receive a grade.

In general, the student will receive the type of grade consistent with the instructor's grading system for the course. However, if a student desires a different type of grade, such as a Pass/Fail designation in a letter-grading system, they must receive approval from the Director of Graduate Studies by the end of the fifth week of the quarter.

In computing GPA's, the Institute uses the following system: A=4, B=3, C=2 D=1, with a "+" or "-" counting as 1/3 of a point. There are no A+ grades recorded in the official student transcripts.

Incompletes

In the case of a student not fulfilling course requirements due to failure to complete all coursework prior to the end of the quarter, the student will receive an *Incomplete* rather than a grade, and this shall be recorded in the student's academic record. The Incomplete will stay on the student's record indefinitely or until such time as he/she completes the coursework.

Withdrawal from Courses After Add/ Drop Deadline

A student may withdraw from a course in the first three weeks of the quarter and it will not appear on his or her transcript. After the third week a student must explicitly request a *W* (withdraw) from the instructor of the course if they do not intend to complete the course. This must be requested prior to the final paper, the final exam or the last day of the quarter, whichever comes first. The instructor is obligated to grant a *W* as requested. This grade is permanent and appears on the transcript but is not calculated in the official GPA.

The Quarter System

The academic year consists of four quarters. All students take courses in the Autumn, Winter, and Spring Quarters. It may be possible for students to take courses in the Summer Quarter, but the summer course offerings are limited and financial support may not be guaranteed. The Autumn, Winter, and Spring Quarters consist of ten weeks of classes plus one week of final examinations. Each quarter is a complete unit of work.

New students may be accustomed to the rhythm of a semester system, and find that adjusting to the quarter system is a challenge that usually requires *changing study habits and improving time management skills*. Because the quarter passes quickly, you must be prepared to begin working seriously on your studies *in the first week of the quarter*.

COURSES AND REGISTRATION

List of Courses

A list of current and upcoming courses (per quarter), along with course details and instructor listing is maintained on the TTIC website (www.ttic.edu/courses).

Registering for Courses

Requirements

Each quarter, students are required to register for at least one course with a letter grade, during the early registration period which begins four weeks prior to the start of the quarter. (The TTIC Independent Research course may qualify for the one course.). Students are expected to confer with their advisor regarding the number and selection of courses, prior to each quarter.

Students that have not registered for any courses by the end of Add/Drop (third Friday of the quarter) will be considered to be in Inactive Status. *All student privileges and stipend payments will be suspended.* The student must then petition the DGS to register for a course or courses in the current or upcoming quarter. If the student is allowed to register and resume active status, student privileges and stipend payments will be reinstated.

To Register for TTIC, UofC

To register, students complete a TTIC [Course Registration & Add/Drop form](#) listing the courses they are enrolling in for the upcoming quarter. This form is on the TTIC Intranet site. The form is electronically forwarded to, and must subsequently be approved by, their advisor. If the course(s) selected are offered by University of Chicago (such as CMSC, MATH, STAT courses,) the student must also register in CMORE, the University of Chicago student record/registration system, using their cNet ID.

Students may sit in on a number of classes at the beginning of each quarter, without officially registering for them. However, they must decide by the end of the third week of the quarter whether they will register for the course. If they do register for that course, they must fulfill all course requirements, including any assignments, tests, projects or the like they may not have completed in the first three weeks (while they were not registered).

Add/ Drop

Accordingly, the Add/Drop deadline is the third Friday of each quarter, and no adds or drops are allowed after that date. Students use the same form for Add/ Drop as they do for Registration.

After the Add/Drop period, if a student cannot complete the requirements of a course, the options available are:

- 1) Request from the instructor a *Withdrawal* from the course at any time prior to the last assignment, test or day of the course, - or -
- 2) Receive an "*Incomplete*" for a grade if all required coursework and/or tests are not completed.

The implications of withdrawals and incompletes are stated in the section "Grading Policy/Incompletes/Withdrawals".

PRE-QUALIFYING CANDIDATE REQUIREMENTS

TTIC does not offer a dedicated master's program. Students who fulfill the requirements as discussed below during the Pre-Qualifying Candidate period may receive a Master's diploma before continuing on to become a Ph.D. Candidate. The chart on *page 12* illustrates a general timeline of requirements and goals to be reached throughout stages of the program as a Pre-Qualifying Candidate.

Pre-Qualifying Candidate Course Requirements

Students are required to take a total of seven courses for partial fulfillment of the requirements, during their Pre-Qualifying Candidate period.

During the Pre-Qualifying Candidate period, a student must complete the following combination of classes from the following categories, as illustrated in the chart below: all three courses from List A, and a total of at least five courses between lists A, B and B.1, and a total of at least seven courses between lists A, B, B.1 and C. Five courses from list A, B and B.1 must be completed before taking the Qualifying Exam (details below,) and then the additional 2 courses shall be taken and completed before the student may become a Ph.D. Candidate. Passing grades must be made in all courses. Overall grade and course requirements are laid out in the two charts below.

List A	List B	List B.1
Algorithms <i>TTIC 31010</i>	Computability and Complexity Theory <i>TTIC 31060</i>	Intro to Bioinformatics & Computational Biology <i>TTIC 31050</i>
Intro to Statistical Machine Learning <i>TTIC 31020</i>	Convex Optimization <i>TTIC 31070</i>	Intro to Computer Vision <i>TTIC 31040</i>
Mathematical Foundations <i>TTIC 31030</i>	Learning and Inference in Graphical Models <i>TTIC 31140</i>	Visual Recognition <i>TTIC 31130</i>
	Approximation Algorithms <i>TTIC 31080</i>	Speech Technologies <i>TTIC 31110</i>
	Statistical and Computational Learning Theory <i>TTIC 31120</i>	
	Signals, Systems & Random Processes <i>TTIC 31090</i>	
	Computational Geometry <i>TTIC 31100</i>	
<p>List C: Supporting classes in the student's research area, approved by the advisor. Classes should generally be regular graduate-level TTIC, UoC Computer Science, UoC Math or UoC Statistics classes consisting of coursework and/or a project and/or an exam. <i>Reading classes, pass/fail classes or special topics classes will not generally be approved.</i></p>		

Timeline and Requirements Chart for Pre-Qualifying Candidate Period

First 5 quarters at TTIC		6 th quarter at TTIC to June 30 of 2 nd year	
3 courses from List A	Schedule Qualifying Exam	↓	Qualifying Exam
2 courses from List B or B.1			
<i>3 courses must have A- or better scores, 2 courses must have B- or better scores (out of 5 courses taken prior to Exam)</i>			
Work on Programming Requirement <i>(Consult with advisor and Programming Czar)</i>			
2 more courses from List B, B.1 or List C <i>Must have B- or better scores.</i>			

Course Exemptions

Students may petition for exemption from List A courses based on very similar graduate level courses from other institutions in which they performed well (generally, received an A-, A or A+).

Exemption petitions should be made to the instructor scheduled to teach the course in the student's first year at TTIC using a [Course Exemption form](#) from the Intranet. Such exemptions will be noted as "exemption-no credit" in the student's record. Even if such exemptions are granted, the student is still required to complete the five courses from Lists A, B and B.1 by end of Winter Quarter of their second year, by taking additional course(s) from List B or B.1.

Transfer Student Course Requirements

Students transferring to TTIC from programs leading to a Ph.D. in other institutions may be granted credit for up to three courses toward the above course requirements based on similar courses taken at the other institution in which they performed well (generally, received an A-, A or A+). This is true for programs in which a Master's degree is obtained on the way to a Ph.D., but not for terminal Master's programs. The request for credit should be made during the first term at TTIC.

If a student receives credit for one or more courses, the following grade requirements are in effect:

Course Credits Transferred (from other institution)	TTIC Courses from List A + B (student must still take)	Adjusted Grade Requirement (for TTIC courses taken)
1	4	One grade below A- is allowed
2	3	All grades must be a minimum of A-
3	2	All grades must be a minimum of A-

Programming Requirement

As part of the TTIC program, students must have or acquire experience in computer programming with a general purpose programming language. Students must demonstrate that they have designed and implemented some substantial software system, either from scratch or as a significant extension to existing software.

The student must be responsible for the design of the software or the extension. The software does not have to be "industrial strength", i.e., it does not have to be polished to the point where it is ready to be released to a user community. A simple demonstration of some algorithm or idea is sufficient. However, the problem should be large enough that significant systems engineering issues are addressed.

This requirement can be satisfied through a summer programming job, programming experience as an undergraduate, or by independently writing software, provided that the above criteria are satisfied.

TTIC has appointed a member of the faculty as "Programming Experience Czar". Students should consult with this faculty member to make sure that whatever project they embark on or have embarked on is substantial enough to provide actual "programming experience". After completion of the project, students will submit a report to the Programming Experience Czar for approval.

Qualifying Exam

Each Ph.D. student must pass a qualifying exam administered by an Examination Committee. Five core courses and the Programming Requirement must be completed before the exam is scheduled, generally by the end of the 2nd week of the Spring Quarter of the student's second year. Extensions for special circumstances can only be approved by the DGS.

The main purpose of the exam is to analyze the student's mastery of concepts of and approaches to areas of computer science appropriate with course portion of the program, and to assess the student's ability to use this knowledge in the solution of problems and in the execution of original research (needed to complete the Ph.D. portion of the program). The exam does not need to cover all topics or touch on all courses taken by the student. However, it is expected the exam will cover both the direct area in which the student intends to do research, as well as other relevant areas.

The DGS will appoint an Examination Committee for each student taking the exam. The student should then schedule the exam at a time convenient for themselves as well as the examiners, prior to the end of June, and reserve a conference room.

The examiners can request the student's transcript from the Registrar and/or consult with the student's advisor or other faculty in order to decide on the topics and focus of the exam. The examiners will assign the student reading material at least three weeks prior to the exam. The exam will focus on the research presented in this reading, as well as related issues (e.g. methods used by the papers, or alternative approaches the papers mention).

The examiners may also provide the student with specific questions or issues they would like the student to consider and discuss in the exam. The examiners should be explicit about whether the student is allowed to discuss these questions with others in preparing for the exam. At the examiners' discretion, specific questions can be provided to the students less than three weeks prior to the exam date, but the student should be told in advance to expect such questions.

The oral exam is expected to last approximately one hour. The student should be prepared to present the research described in the assigned reading, and address the issues and questions assigned. This typically includes slides or other presentation aids.

Examiners may ask additional follow-up questions during the exam. The examiners must reach consensus on the outcome of the exam. Possible outcomes are:

- Full pass. This results in a recommendation to continue in the Ph.D. Program.
- Continuation. A continuation means that the student did not yet pass the exam and must still complete it before continuing in the Ph.D. program. A continuation of the examination must be scheduled with the same committee and possibly with additional reading material.
- Failure. The student may not continue in the PhD Program. The student may petition the Director of Graduate Studies to retake the exam.

The examiners will provide formal feedback orally to the student regarding their performance in the exam, as well as via a [Qualifying Exam Evaluation form](#), which will become part of the student's record at TTIC. *Students should print this form from the TTIC Intranet and bring it to the exam.*

Master's Diploma

After passing the Qualifying Exam, completing all requirements for coursework (including eligible grades,) and the Programming Requirement, a student may apply to receive a Master's Diploma from the TTIC Registrar. Master's Diplomas are awarded each fall at the beginning of the academic year (usually late September). Students who will be awarded diplomas will be notified during the summer of the exact date of the diploma ceremony.

A student who leaves the program after completing the pre-Candidacy course requirements (i.e. all three list-A courses, at least 5 total from A, B and B.1, and at least seven total from A, B, B.1 and C) with passing grades (the minimum grade requirements for candidacy need not be satisfied), may also apply to receive a Master's Diploma.

PH.D. CANDIDATE REQUIREMENTS

There are four main required components of the Ph.D. program, as follows.

- Course requirements, including the Application Requirement
- Programming requirement
- Qualifying exam
- Doctoral thesis and defense

Full details for the Pre-Qualifying Candidate portion of the Ph.D. program are listed above. Course requirements as a Ph.D. Candidate, and thesis details are found in the text below. A full timeline reference chart of the Ph.D. Program as a whole may be found on [p. 17](#)

Candidacy

To become a Ph.D. Candidate and therefore allowed to continue in the program, a student must have completed seven core courses as detailed in the requirements chart on [p.12](#), the programming requirement, passed the Qualifying Exam, and have a research advisor willing to supervise the student's Ph.D. thesis work. If all these requirements are met, the Director of Graduate Studies will notify the student that they have become a Ph.D. Candidate. If the requirements have not all been satisfied by the end of the Autumn quarter of the student's third year, the student may be asked to leave the program. Extension may be granted by the DGS based on special arrangements.

Research Advisor

Before taking the Qualifying Exam, the student must choose a regular research advisor and formally sign the [Research Advisor Declaration form](#) which is then kept by the Registrar. This form can be found on the TTIC Intranet.

The relationship between a student and their advisor is a central aspect of the Ph.D. program. This relationship requires the ongoing consent of both parties - either party can withdraw from a Ph.D. research advising relationship by notifying the Chief Academic Officer (CAO). The DGS and the CAO shall be notified of all changes in advisors.

When the advisor of a student is also the DGS, then any action or approval that is normally required by the DGS will instead be required by the CAO.

There are many helpful books and guides available such as [Mastering Your Ph.D.: Mentors, Leadership, and Community](#) by Patricia Gosling, Bart Noordam (in the TTIC Library) that give good tips about how to utilize your advisor, getting the most out of the relationship, and what to do to be of good use to your advisor in return.

An advisor will steer a student through the process of determining when research is reaching milestones that indicate it may be thesis proposal time, defense, and even provide insight into plotting a course for a career, once their student has achieved their Ph.D. degree.

Ph.D. Candidate Course Requirements

Students are required to take a total of nine courses for partial fulfillment of the requirements for the Ph.D. degree.

Five courses are required by the end of the Winter Quarter of students' second year, two more courses once the Qualifying Exam is scheduled, and a final two courses once a student is notified that they have attained Ph.D. Candidate status.

To fulfill the **Application Requirement** of coursework, at least *one* of the four courses taken from List B must be from List B.1. This course can also count toward the five courses required prior to Ph.D. Candidate status. A grade of B- or higher is required in this course. This requirement should be completed before submitting a thesis proposal. *Similar courses taken at another institution will not qualify to fulfill or be exempt from this requirement.*

List A	List B	List B.1
Algorithms <i>TTIC 31010</i>	Computability and Complexity Theory <i>TTIC 31060</i>	Intro to Bioinformatics & Computational Biology <i>TTIC 31050</i>
Intro to Statistical Machine Learning <i>TTIC 31020</i>	Convex Optimization <i>TTIC 31070</i>	Intro to Computer Vision <i>TTIC 31040</i>
Mathematical Foundations <i>TTIC 31030</i>	Learning and Inference in Graphical Models <i>TTIC 31140</i>	Visual Recognition <i>TTIC 31130</i>
	Approximation Algorithms <i>TTIC 31080</i>	Speech Technologies <i>TTIC 31110</i>
	Statistical and Computational Learning Theory <i>TTIC 31120</i>	
	Signals, Systems & Random Processes <i>TTIC 31090</i>	
	Computational Geometry <i>TTIC 31100</i>	
<p>List C: Supporting classes in the student's research area, as approved by the advisor. Classes should generally be regular graduate-level TTIC, UoC Computer Science, UoC Math or UoC Statistics classes consisting of coursework and/or a project and/or an exam. Reading classes, pass/fail classes or special topics classes will not generally be approved.</p>		

All nine required courses should be completed before a thesis proposal is submitted. The minimum grade requirement for all courses is B-. A student may petition the Director of Graduate Studies to approve lower grades for courses in list C under special circumstances.

Students who receive grades below A- in courses from list A, B or B.1 may petition course instructors to receive an A equivalent based on extra study, an oral exam, a project, or other arrangements as determined by the instructor. Such an A- equivalent will not replace the original grade in the student's transcript, but will be noted in the student's record and count toward fulfilling the 5-course requirement. Students should petition the instructor who most recently taught the course. Alternatively, the student may choose to repeat the class.

Timeline and Requirements Chart for Ph.D. Program

Enrollment 

First 5 quarters at TTIC		6 th quarter at TTIC to June 30 of 2 nd year		Ph.D. Candidate Phase		Thesis Research
3 courses from List A	Schedule Qualifying Exam	↓	Qualifying Exam	2 more courses from List B or List C (or from List B and C) <i>Must have B- or better scores.</i>	Thesis Proposal	Schedule to be determined by student and Research Advisor
2 courses from List B or B.1				Fulfill Application Requirement <i>At least 1 course of the four taken from List B shall be from List B.1, with a score of B- or higher.</i>		
<i>3 courses must have A- or better scores, 2 courses must have B- or better scores (out of 5 courses taken prior to Exam)</i>						
Work on Programming Requirement <i>(Consult with advisor and Programming Czar)</i>						
2 more courses from List B, B.1 or List C <i>Must have B- or better scores</i>						

By Thesis Proposal time, a student should have acceptably completed the following nine courses:	3	List A courses
	4	List B courses <i>(incl. Applic Req.)</i>
	2	List C courses

Doctoral Thesis and Defense

The institute requires each student to write a Doctoral Thesis that includes significant original research in computer science.

Thesis Committee

The student's Thesis Committee must consist of at least three faculty members, with at least two TTIC tenured and/or tenure-track faculty. The third and any further members may be any TTIC faculty (tenured, tenure-track, research or visiting), or University of Chicago faculty. With the specific approval of the Chief Academic Officer, the third and further members may also be faculty or equivalent at another institution. The chair of the Thesis Committee is the student's advisor.

The student must choose their Thesis Committee members and complete the [Thesis Committee Membership Request form](#) available on the Intranet. The Registrar keeps this record in the student's file.

Thesis Proposal Defense

The student presents their thesis proposal defense orally to the Committee and the Committee either approves or makes recommendations. The student is expected to provide the Committee with a written thesis proposal as well. The student's proposal is evaluated both orally and on a [Thesis Proposal Approval form](#) which is provided (by the thesis committee) to the Registrar to be placed in the student's file.

Thesis Defense

The student must successfully defend his or her thesis in a public forum before the Thesis Committee and any other interested TTIC community members. The Thesis Committee will decide the format for the defense. An evaluation will be provided to the student both orally and on a [Thesis Defense Evaluation form](#), by the Thesis Committee subsequent to the defense. The thesis defense must occur at least two weeks after the student has given proper notice. Proper notice consists of the following actions:

- The student must give a draft of the thesis, approved by the advisor, to each member of the Thesis Committee and to the Chief Academic Officer. The draft must be nearly complete with only minor changes expected in the final version.
- The student must put an additional copy on display in a common area designated by the Registrar.
- The thesis abstract must be posted in a common area designated by the Registrar.
- The student must advertise the time and date of the defense in the appropriate TTIC mailing lists.

The TTIC Registrar may assist students with securing a room for the defense to be held.

Thesis Publication Requirements

Doctoral theses are original contributions to scholarship. As such, they should be and are made available to the scholarly community at the Institute and elsewhere. As a condition for receipt of the doctorate degree, all doctoral theses produced by students at the Institute are bound and placed in the circulating collections of the Institute Library. They are made available to researchers here through direct borrowing, and copies may be purchased from **ProQuest** Information and Learning.

An abstract is published in "Dissertation Abstracts" and made available electronically through ProQuest Digital Dissertations along with the digitized full text of the dissertation itself.

After the student receives the Ph.D. degree, **one copy of the thesis is added to the Institute Library's collections. The other copy and the abstract are sent to ProQuest Information and Learning.** All students are required to execute a publication agreement with ProQuest. Because the thesis is published, students should be aware that they must obtain permission from the holder(s) of the copyright(s) to include any copyrighted material in the thesis. The Institute will require documentary evidence that the student has obtained all necessary permissions or has made a good faith effort to do so.

Doctoral Thesis Handbook

TTIC is compiling a Doctoral Thesis handbook which will include more detail, description and samples regarding all aspects of the thesis: cosmetic, copyright, title page, publishing, binding and page formatting.

Ph.D. Degree Completion

The deadline for the Ph.D. degree is *three weeks prior to the last day of the quarter* in which the student expects to graduate. All requirements must be met and approved by this date. The final thesis (compiled as outlined in the Thesis Handbook, bound and signed by the student's advisor and Thesis Committee) should be submitted to the TTIC Registrar by the student.

Doctoral Diploma

Once a student has completed all requirements for the Ph.D. Program, they will be notified that they will receive their diploma, and a date will be set for the diploma to be awarded.

List of Documents and Forms (Samples)

Form Sample	page
Course Exemption Form	21
Course Registration & Add/Drop Form	22
Research Advisor Declaration Form	23
Student Data form	24
Thesis Committee Membership Request Form	26
Thesis Defense Evaluation	27
Thesis Proposal Approval Form	33
Qualifying Exam	36

Please note:

Up to date versions of all forms referenced in this Guide may be found on the TTIC Intranet site. You must have a "ttic.edu" email address to access the Intranet's functionality. The forms listed below are for visual reference only.

**Toyota Technological Institute at Chicago
Course Exemption Request**

Print Form

Form 10-01-2010

Students may petition for exemption from List A courses based on very similar graduate-level courses from other institutions in which they performed well (generally, received an A-, A or A+). Exemption petitions should be made to the instructor scheduled to teach the course in the student's first year at TTIC. Such exemptions will be noted as "exemption-no credit" in the student's record. Even if such exemptions are granted, the student is still required to complete the five courses from Lists A and B by end of Winter Quarter of their second year, by taking additional course(s) from List B.

Student Name	<input type="text"/>	ID #	<input type="text"/>
TTIC Course Name	<input type="text"/>	Course Number	<input type="text"/>
Name of course taken at other institution	<input type="text"/>	Date Taken (Month/Year)	<input type="text"/>
Name of Institution	<input type="text"/>	Final Grade	<input type="text"/>

Please attach supporting documentation such as: course curriculum, textbook used, transcript showing grade received, final exam, sample work completed in course, etc.

Student Signature	Date
-------------------	------

Reviewing Faculty Section

Reviewing faculty to consult with Chief Academic Officer if course was taken five or more years ago, prior to signing below.

- I met with the student on _____ to further discuss the course and/or the student's knowledge level of the subject. **OR**
 I make my recommendation based on materials submitted by the student without meeting with the student.

I have reviewed the facts presented and I: Grant the above exemption. Deny the above exemption.

Comments (Why denied, exemption granted under certain conditions, etc. Attach extra sheet if necessary.)

Reviewing Faculty Signature	Date
-----------------------------	------

Reviewing Faculty: Please return completed and signed form to the TTIC Registrar.

Registrar Section

I have notified the student of the determination noted above. Registrar's Initials & Date



Course Registration & Add/Drop Form

Quarter: Autumn 2011

Select: Initial Quarterly Registration Add Drop

Name: _____
 UOC Student ID: _____
 Email: _____
 Adviser (TTI-TT): _____
 Adviser (TTI-TT) Email: _____
 Other Adviser (if not TTI-TT): _____
 Other Adviser (if not TTI-TT) Email: _____

If you are taking TTIC 800 Independent Research and/or TTIC 900 Independent Reading, please indicate which course(s) you are taking and enter the name and email address of the adviser(s) for each:

Independent Research TTIC 800 Indicate Add or Drop: -
 Adviser Name: _____
 Adviser Email: _____
 Adviser Name: _____
 Adviser Email: _____

Independent Reading TTIC 900 Indicate Add or Drop: -
 Adviser Name: _____
 Adviser Email: _____
 Adviser Name: _____
 Adviser Email: _____

Enter all other University of Chicago and/or TTIC courses you are taking here:

Course 1
 Indicate Add or Drop: -
 Course Number: _____
 2-digit Section #: _____
 Course Name: _____
 Instructor: _____
 Course Schedule - Day/Time: _____

Course 2
 Indicate Add or Drop: -
 Course Number: _____
 2-digit Section #: _____
 Course Name: _____

Instructor: _____
 Course Schedule - Day/Time: _____

Course 3
 Indicate Add or Drop: -
 Course Number: _____
 2-digit Section #: _____
 Course Name: _____
 Instructor: _____
 Course Schedule - Day/Time: _____

Course 4
 Indicate Add or Drop: -
 Course Number: _____
 2-digit Section #: _____
 Course Name: _____
 Instructor: _____
 Course Schedule - Day/Time: _____

Course 5
 Indicate Add or Drop: -
 Course Number: _____
 2-digit Section #: _____
 Course Name: _____
 Instructor: _____
 Course Schedule - Day/Time: _____

Submit Form

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Advisor Declaration Form

In accordance with the TTIC Academic Program Guide, I hereby select

_____ to be my advisor. I have

discussed this matter with him/ her, and our signatures below signify our

agreement on the matter.

Student name (*print*): _____

Student signature

Date: _____

Professor Signature

Date: _____

Chief Academic Officer Signature

Date: _____

[Student Data Form](#)

Toyota Technological Institute at Chicago

Name:

Email:

Adviser (TTI-TT):

Adviser (TTI-TT) Email:

Other Adviser:

Other Adviser Email:

What courses did you take this quarter, what requirements were fulfilled and state your opinion of your performance in the courses (this may or may not be reflected in the grade you received).

Please give a brief description of your research activities this quarter and the faculty who advised you.

Did the research result in any papers? If so, please give title, list of authors, where submitted and if accepted for publication. Give full citation if published.

List your goal as established by you and your advisor for this quarter. What achievements did you make in each?

What courses are you planning to take next quarter?

What academic activities are you planning on undertaking next quarter? Please list your goals in the following areas, including the relevant faculty member who will be supervising or mentoring the activity: Courses, Reading, Research, Teaching, Meetings with faculty, other academic internal/external duties such as reviewing papers for conferences, organizing and/or attending conferences.

Did/will you participate in any paid work outside TTIC this quarter or next (e.g., consulting)? If so, please list.

Information submitted on this form will be used to prepare for your annual evaluation.

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AGREEMENT TO SERVE- THESIS COMMITTEE

Student: Please type in all information and then print, (leaving signature line blank. Must be original signature.)

Student name: _____ UoC ID#: _____

Thesis title/ Topic: _____

I agree to serve on the Thesis Committee for the student listed above.

I understand that my duties on the committee will include attending and approving a thesis proposal, commenting on the thesis, attending the thesis defense and evaluating the final thesis.

Name: _____

Title: _____

Institute: _____

Email _____ Phone: _____

Signature: _____ Date: _____

Student: Submit to TTI-C Registrar once signature is obtained.

Print Form

Office Use Only:

Entered Into Student's Records Date _____ Initials _____

CN April 2008

**Toyota Technological Institute at Chicago
Ph.D. Thesis Defense Evaluation**

Section 1, To be Completed by Student

Print Name _____ Date _____

Thesis Title: _____

Date Thesis Draft Submitted: _____

Date of Defense: _____

Section 2, Outcome of Thesis Defense

- The Thesis in its current form is acceptable.
- The Thesis requires minor modifications (see comments below) and will be acceptable after these are made. The modifications will be approved by the Research Advisor only. A letter must be submitted by the student together with the modified thesis, detailing the modifications.
- The Thesis requires major modification and will be re-evaluated by the committee after these are made (an additional copy of this form will be used for the re-evaluation).
- The Thesis in its current form is not acceptable:

Committee Member Name- print *Signature* *Date*

Committee Member Name- print *Signature* *Date*

Committee Member Name- print *Signature* *Date*

Committee Member Name- print *Signature* *Date*

Section 3, To be completed by Research Advisor if Minor Modifications Requested

- I reviewed the revised Thesis. The committee member's concerns were addressed and the thesis is now acceptable.

Research Advisor Name - print *Signature* *Date*

Section 4, Approval by Chief Academic Officer

- The Thesis is accepted in partial fulfillment of the requirement of a PhD.
- The Thesis is accepted in partial fulfillment of the requirement of a PhD, with distinction.

Dr. David McAllester,
Chief Academic Officer _____
Signature *Date*

Section 5, Detailed Evaluation and Comments

*THIS SECTION IS NOT RETURNED TO STUDENT.
TO BE PLACED IN STUDENT FILE BY REGISTRAR ONLY.*

1) Overall quality of research and thesis.

Committee Member (<i>print</i>)	Excellent	Very Good	Adequate	Requires Impvmt.	Inadequate
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (not returned to student):

2) Scope of the research.

Committee Member (<i>print</i>)	Excellent	Very Good	Adequate	Requires Impvmt.	Inadequate
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (not returned to student):

3) Extent of novel contribution.

Committee Member (<i>print</i>)	Excellent	Very Good	Adequate	Requires Impvmt.	Inadequate
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (not returned to student):

4) Significance of research.

Committee Member (<i>print</i>)	Excellent	Very Good	Adequate	Requires Impvmt.	Inadequate
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (not returned to student):

5) Completeness of thesis (adequate background, literature survey, experiments, etc.).

Committee Member (<i>print</i>)	Excellent	Very Good	Adequate	Requires Impvmt.	Inadequate
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (not returned to student):

6) Quality of writing.

Committee Member (<i>print</i>)	Excellent	Very Good	Adequate	Requires Impvmt.	Inadequate
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (not returned to student):

7) Quality of oral presentation.

Committee Member (<i>print</i>)	Excellent	Very Good	Adequate	Requires Impvmt.	Inadequate
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (not returned to student):

Section 6, Recommendation of Distinction
To be Completed on an Individual Basis Only if Making Such a Recommendation

THIS SECTION IS NOT RETURNED TO STUDENT.
TO BE PLACED IN STUDENT FILE BY REGISTRAR ONLY.

I recommend the thesis receive distinction. Reasoning:

Committee Member Name- print *Signature* *Date*

I recommend the thesis receive distinction. Reasoning:

Committee Member Name- print *Signature* *Date*

I recommend the thesis receive distinction. Reasoning:

Committee Member Name- print *Signature* *Date*

I recommend the thesis receive distinction. Reasoning:

Committee Member Name- print *Signature* *Date*

I recommend the thesis receive distinction. Reasoning:

Committee Member Name- print *Signature* *Date*

Section 7, Evaluation Provided to Student:

Instructions to Examiners: Aggregate all ratings either by averaging all ratings, or superimpose the ratings and mark multiple ratings for each item.

1) Overall quality of research and thesis.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

2) Scope of the research.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

3) Extent of novel contribution.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

4) Significance of research.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

5) Completeness of thesis (adequate background, literature survey, experiments, etc.).

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

6) Quality of writing.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

7) Quality of oral presentation.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

Additional comments to student:

Section 4, Evaluation Provided to Student:

Instructions to Examiners: Aggregate all ratings either by averaging all ratings, or superimpose the ratings and mark multiple ratings for each item.

1) Scope of the Research.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

2) Extent of novel contribution.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

3) Significance of research.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

4) Completeness of suggested thesis (adequate background, literature survey, experiments, etc.).

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

5) Quality of writing.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

6) Quality of oral presentation.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

7) Feasibility of research taking into account available resources and proposed timeline.

Excellent Very Good Adequate Requires Impvmt. Inadequate
[] [] [] [] []

Comments to student:

Additional comments to student:

**Toyota Technological Institute at Chicago
Qualifying Examination**

In Partial Fulfillment of Ph.D. Candidacy Requirements

Section 1

Please check one:

- Initial Exam
- Continuation Exam Date of initial exam: _____
(Please attach forms from initial exam)
- Repeat Exam Date of initial exam: _____

Section 2, to be completed by student:

Print Name _____
Today's Date

Advisor(s): _____

Your General Area of Research: _____

Section 3, to be completed by Chief Academic Officer or representative:

Name of Examination Chair: _____

Other examiners: _____

CAO (or representative) Name - *Print*

CAO (or representative) *Signature* _____
Date

Section 4, to be completed by Examination Chair:

Assigned reading: _____

Date reading assigned: _____

Please attach any guidelines or questions given to the student in advance of the exam.

1

Section 5, Results of Exam, to be completed by Examination Chair:

Exam date: _____

Exam outcome:
 Pass

Conditional pass or continuation, based on the following conditions:

Fail
 Recommendation to allow retaking the exam
 Recommendation to not allow retaking the exam

Signature of ALL examiners (must reach consensus):

_____ <i>Name- print</i>	_____ <i>Name-signature</i>	_____ <i>Date</i>
_____ <i>Name- print</i>	_____ <i>Name-signature</i>	_____ <i>Date</i>
_____ <i>Name- print</i>	_____ <i>Name-signature</i>	_____ <i>Date</i>
_____ <i>Name- print</i>	_____ <i>Name-signature</i>	_____ <i>Date</i>

