



ACADEMIC PROGRAM GUIDE

2025-26

Preamble: the education mission of TTIC

TTIC is guided by its mission:

***Achieving international impact through world-class research and education
In fundamental computer science and information technology.***

This mission has two overlapping components --- a research mission and an education mission. The latter is central to the design and organization of the PhD Program at TTIC.

The PhD program helps TTIC “achieve international impact” through the accomplishments of its graduates as productive scientists and citizens. The notion of “impact” in the education mission is broader than in the research mission. TTIC strives to produce PhDs who achieve academic impact throughout their careers, and who contribute to society through their intellectual leadership in computer science and information technology. The graduates of TTIC might also achieve impact by starting successful companies, managing successful products, or influencing government directions in research funding.

Success in the education mission requires appropriate selection of curriculum, effective teaching to enable learning, effective assessment and mentorship of students as researchers, and effective guidance and promotion of students in the post-graduation job market. TTIC strives to place its PhD graduates at high-quality research institutions. TTIC also strives to make its PhD students visible to the academic community before graduation through publications, talks, external collaborations and networking.

The strength of TTIC lies in its **people**. Whether directly involved in research and education, such as faculty and students, or providing the infrastructure and support needed for these activities to take place, all of our people are important to the success of TTIC’s mission. TTIC acknowledges the value provided by each member of its community and aims to provide all its members with the tools and support they need to do their part in advancing the institute’s mission.

To this end, TTIC is committed to effective policies, compliant with TTIC’s values and with all applicable laws and regulations, that foster and expand a supportive and inclusive environment to encourage success for students, staff, and faculty. The institute aims to exploit the intellectual abilities and talents of all segments of society. TTIC’s collective success in its research and education missions depends on the robust exchange of ideas, as well as on collaboration, innovation, creativity, and broad participation. This requires a dedication to respecting and welcoming diversity of backgrounds, identities, and viewpoints among its faculty, staff, student body, and broadly in every aspect of its educational program.

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1. Introduction to the Program

The PhD Program at the Toyota Technological Institute at Chicago is designed to prepare students for academic or research careers, and leads to a doctorate in computer science. To complete the PhD Program a student must make an original and significant contribution to the field of computer science and this contribution must be described in a PhD Thesis. On the way to the PhD Thesis, the student must meet course and examination requirements for the completion of the Program. These requirements and the process and timeline for meeting them are described in this Academic Program Guide.

Students should keep in mind that these formal requirements are only a part of obtaining a PhD degree. The main component of a PhD program is the often intangible process by which the student develops research skills and becomes a part of the academic community. Progress in the program will be assessed by a student's progress in research as well as their progress in satisfying the formal requirements.

This Academic Program Guide outlines both 'requirements', meeting which is necessary to maintain good academic standing, and 'expectations' -- these are formulated as recommendations or guidelines based on the collective experience of the faculty, but are not formal requirements and not enforced. Please read carefully and take note of which elements of the timeline are expected vs. required.

1.1 Academic Calendar

The academic year consists of four quarters. All students register for courses in the Autumn, Winter, and Spring Quarters. Summer course offerings are limited, and the quarter is commonly used for focused research or, with advisor's approval, outside internship opportunities.

The Autumn, Winter, and Spring Quarters consist of nine weeks of classes plus one week of final examinations. Summer Quarter is ten weeks in total.

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, students must be prepared to begin working seriously on their studies in the first week of the quarter.

2025 AUTUMN QUARTER	
Registration	Monday, September 22
Quarter Begins	Monday, September 29
Thanksgiving Break	November 24-28
Quarter Ends	Friday, December 12

2026 WINTER QUARTER	
Quarter Begins	Monday, January 5
Martin Luther King, Jr. Day	3rd Monday in January
Quarter Ends	Friday, March 13
Quarter Ends	Friday, March 13

2026 SPRING QUARTER	
Quarter Begins	Monday, March 23
Memorial Day	Last Monday in May
Quarter Ends	Friday, June 5

2026 SUMMER QUARTER	
Quarter begins	Monday, June 15
Juneteenth	Thursday, June 19
Independence Day	Friday, July 3
Quarter Ends	Friday, August 21

The institute will notify students of any academic calendar changes.

1.2 Program Prerequisites

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

Graduate education at TTIC builds on ideas and material learned during undergraduate education. Specifically, the Institute expects the students to be familiar and comfortable with the topics listed in the table below. These subjects are considered a prerequisite for graduate education and for required core courses at TTIC.

Recommended Prerequisites	
Subject Name	Detail
Discrete Math	Sets, functions and relations; boolean/logical arithmetic; modular arithmetic; basic graph concepts; basic combinatorics including inclusion/exclusion and generating functions.
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
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
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 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 Python, C, C++ or Java; Data types; Variable scope; Pass by value/ by reference; Modularity, abstraction and reuse; Iteration and recursion

Upon entering the graduate program, the student will report on a [New Student Prerequisite Form](#) (provided at orientation) their level of familiarity with each of the subjects 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 subject area or do not feel comfortable with some of the topics mentioned, may be prescribed independent study from a textbook (as recommended by TTIC) or online course, or may be recommended. In some cases, the student may be required by the DGS to take an appropriate TTIC or UChicago (graduate or undergraduate) course. In such cases, the students will be notified of this requirement during their first quarter at TTIC, and the requirement(s) should be met within a year.

English Language Prerequisites and Further Enhancement for International Students:

To be successful in the academic program, it is essential that each graduate student is competent in understanding and communicating in English. The assessment of English competency will be made based on two factors: 1) the TOEFL or IELTS score, and 2) applicant interviews. Current English language proficiency requirements are listed on the institute website's Admissions page (<https://ttic.edu/studentapplication>) in the section 'English Language Requirements'.

1.3 Glossary

This Academic Program Guide (APG) contains extensive use of a few acronyms and shorthand, briefly defined below and, when necessary, further explained later:

DGS: Director of Graduate Studies; a faculty member in charge of overseeing the program, designing and maintaining the processes involved in students' progress towards the degree, and resolving any issues arising for individual students or the program as a whole. The DGS performs these duties in regular consultation with the faculty. Current DGS is Prof. Greg Shakhnarovich.

ADGS: Administrative Director of Graduate Studies; TTIC official coordinating the administration of the PhD program, also serving as Registrar. Current ADGS is Chrissy Coleman.

Advisor: the faculty primarily responsible for supporting and guiding the student through the program. Depending on the stage in the program, this will be either the interim advisor (pre-candidacy) or research advisor (post-candidacy). See Section 2.1 for details.

Approval (by DGS or Advisor): The approval must be in writing, typically (unless specified otherwise to involve a specific Institute form or other document) as an e-mail from the approver to the student and/or ADGS.

CAO: Chief Academic Officer of TTIC. The CAO is the leader of the faculty, roughly equivalent to the role of Department Chair (and in part, Provost) at other institutions. Current CAO is Prof. Avrim Blum.

Candidacy: PhD Candidacy status is conferred on the student upon completion of a set of requirements outlined in this Guide. Effectively signifies that the student is on the final (typically quite long) stretch towards their degree, focusing primarily (although not entirely) on research culminating in the thesis.

The Faculty: unless specified otherwise, this refers to TTIC tenured and tenure-track faculty: Assistant Professors, Associate Professors and (full) Professors.

Forms: Up-to-date versions of all forms referenced in this Guide may be found on the [TTIC Registrar site](#). You must have ttic.edu credentials (username and password) to the Registrar site's functionality.

Lists A,B, etc. (for course designations): Courses available to TTIC students, either at TTIC or at the University of Chicago, are assigned to one of the lists. See Section 4 for details.

Petition: written request for special accommodation (e.g., extending a deadline for a requirement), made, unless specified otherwise, by e-mail to the DGS. Unless noted otherwise in this APG, **all petitions must be made no later than six weeks prior to the due date of the requirement in question.**

Policies: TTIC policies are accessible through TTIC's [DocTract](#) website; requires signing in with ttic.edu credentials. The [Student Handbook](#) is the collection of policies addressing on student matters.

University, or the University: University of Chicago, on whose campus TTIC is located and with which it maintains close relationships.

2. Program structure and milestones

This section provides the overview of the PhD program, listing all the requirements and the timeline for meeting them. **Students entering the program should read this section carefully and plan their coursework and research activities accordingly.** A student entering the program in the 2025-2026 academic year must meet all the requirements listed here, even if the program requirements or timeline are changed in subsequent years (unless granted otherwise by the DGS).

The program consists of two stages:

- **Pre-Candidacy:** Typically the first two years in the program. This stage is usually dominated by learning and meeting formal requirements: learning about technical material (taking courses), learning about the research environment at TTIC (attending Research at TTIC series), and learning about doing research (picking a research area and forming a connection with a Research Advisor). Other formal requirements at this stage include meeting the programming requirement and applying for and passing the Qualifying Exam.

This stage culminates in applying, and being approved, for PhD Candidacy.

- **Candidacy:** Typically year three through completion of the PhD program. While students in Candidacy typically continue taking classes, this stage is dominated by developing and pursuing an independent research agenda (under the guidance of the Research Advisor(s) and ultimately the PhD thesis committee). Students hone the skills necessary to become a successful researcher. Formal requirements usually met at this stage include giving a research talk and obtaining experience as a Teaching Assistant.

The Candidacy stage leads to forming the thesis committee, defending a thesis proposal, and finally defending, finalizing and submitting the PhD thesis, the final and most important requirement for graduating as a freshly minted TTIC PhD.

Below is an overview of the progression of requirements and milestones that a student must tackle to progress in the program. Details of all requirements and the process for meeting them appear in the remainder of this Guide.

**Pre-Candidacy
Before applying for the Qualifying Exam:**

30 days within enrollment:

successfully complete Responsible Conduct of Research (RCR) training.

First three quarters:

Research at TTIC requirement completion with 3 grades of Pass

First six quarters: meet pre-Qualifying Exam course requirement (Section 4, courses and units)

300 units from list A + 200 units from lists B and B.1;
at least 3 grades of A- or better, the rest B- or better

By end of sixth quarter:

satisfy the Programming Requirement (Section 5.3)

Meeting the requirements above allows the student to apply for the Qualifying Exam (Section 6).

By end of week 2 of the seventh quarter:

apply for the Qualifying Exam (approved if all the above requirements are met).

**Pre-Candidacy
To be eligible for Candidacy:**

By end of eighth quarter:

pass the Qualifying Exam (Section 6).

By end of eighth quarter: meet pre-candidacy course requirement (additional to pre-Qualifying Exam requirement; see Section 7)
200 units from lists B, B.1, and C + 300 units from lists B, B.1, C and D;
at least 2 grades of B- or better, the rest must be passing grades.

By end of week 8 of the eighth quarter:
apply for Candidacy or Master's Diploma (Section 7).

See Section 5 for more details on the pre-Candidacy requirements.

Applications for Candidacy are typically discussed and voted on by the faculty at the closest evaluation meeting (see Section 3; for most students, this is the Autumn meeting in their third year). Besides meeting the requirements above, the Candidacy is conditioned on securing a commitment from a Research Advisor (Section 7.2). Once the Candidacy is approved, the student may still need to take more courses and meet additional requirements outlined below, but the main focus in Candidacy is on conducting (increasingly independent) research and eventually proposing and defending the PhD thesis.

Candidacy **Finally, to get the PhD degree:**

By end of year 4 (16th quarter): form a thesis committee (Section 9.1)

By end of year 5 (20th quarter): defend thesis proposal (Section 9.2)

Prior to graduation: meet course requirement (beyond pre-candidacy requirement, Section 8.1)
300 more units from lists B, B.1, C, and D, with passing grades
(1300 units total between pre-candidacy and candidacy)

Prior to graduation: fulfill the TA service requirement (Section 8.2)

Prior to graduation: fulfill the student talk requirement (Section 8.3)

To graduate: meet all of the requirements above, write the thesis, announce and successfully pass thesis defense, and submit the final thesis, approved by the committee, as an [arXiv](#) active link supplied to the Registrar (see Section 9 for details).

Most of the post-Candidacy requirements (coursework, TA, talk) can be met earlier, even during pre-Candidacy, with the exception of thesis committee and proposal defense that can only be done once the student is approved for Candidacy and has a committed Research Advisor.

Requesting extensions: Meeting all the above requirements by the respective deadlines is necessary to maintain good academic standing (see Section 3). If a student anticipates difficulty meeting a requirement on time, the student must request an extension from the DGS in writing, explaining the reason for the anticipated delay and specifying the requested extension length. The request must be submitted no later than six weeks prior to the standard deadline for the requirement in question. The DGS may request to meet with the student and, if deemed necessary, to discuss the request with the Advisor and with the faculty before deciding whether to approve the request.

2.1 Advisors

Upon entry to the program the Institute assigns each student, in consultation with the student, an **Interim Advisor**. Interim Advisors will assist students with course selection, initiating research, navigating the Pre-Candidacy stage of the program, up through the Qualifying Exam, and will provide regular assessment.

A **Research Advisor** assists the student through the Candidacy stage of the PhD Program. The Research Advisor(s) will head the student's thesis committee, and will offer guidance regarding research, thesis matters and post-thesis opportunities. Often, a student's Interim Advisor becomes their Research Advisor, but it is not automatic and should not be assumed without an explicit discussion with the interim advisor.

Students are encouraged to take the initiative early in talking about research directions with their interim advisor, as well as with any TTIC faculty member whose research area interests them. Students should aim to find a good research advisor match by the end of year one, to allow time to work together in year two, and formalize the student-advisor agreement at the end of year two in time for Candidacy approval. See Section 7.2.

Advisor of Record: It is possible for a student to have a de-facto research advisor who is not a TTIC tenure-track faculty member, such as a TTIC Research Assistant Professor, a University of Chicago professor, a TTIC adjunct faculty member, or an external professor or researcher (external advising is subject to approval by the DGS and CAO). In such cases the student will need to have a designated TTIC tenure-track faculty member research advisor -- Advisor of Record (AoR). A student may also have multiple TTIC tenure-track faculty research advisors (co-advising). In such a case, one of them will be designated by the DGS as the AoR. AoR approves course registrations, signs forms requiring advisor signature (other than candidacy- and thesis-related forms, which must be signed by all Research Advisor(s) in addition to AoR), and is the primary representative of the student at assessment meetings.

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

Change of Advisor

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

An Advisor on Leave

When the advisor goes on sabbatical or other long-term leave during the student's time in the program, it is expected that the student and advisor shall maintain an ongoing academic relationship with regular contact. In cases where an advisor on leave cannot maintain the regular contact and advising responsibilities, a temporary local AoR will be assigned to the student by the Chief Academic Officer. Read more on [An Advisor Taking Sabbatical: What to Expect](#) in DocTract.

2.2 Residency Requirements and Expectations

Students enrolled in TTIC's program are normally expected to perform the degree work in-residence: on campus in the Institute community, interacting with the faculty, other graduate students, and the wider University community.

Being in-residence is defined as residing within 50 miles of the TTIC campus, and regularly participating in on-campus academic activity, meetings, and courses (as appropriate given their current stage in the academic program) for most of each academic quarter, notwithstanding occasional travel elsewhere.

The Institute requires the student to be in full-time residence (regular in-person attendance for courses, meetings and academic activity) until the Pre-Candidacy requirements are fulfilled, (mandatory residence and registration for Autumn, Winter, Spring and Summer Quarters). A student may request to be not-in-residence for up to one quarter before Candidacy, typically Summer Quarter after their first or second year (e.g., for an approved internship), subject to the following:

- Only one not-in-residence quarter is permitted before all Pre-Candidacy requirements are fulfilled. (Note: the student need not be in residence after the requirements are fulfilled but before Candidacy is approved.)

- Requests for being out-of-residence for a quarter must be approved by the student's advisor. Such approval must be conveyed in writing to ADGS before the registration period for the quarter in question. Consult the Registrar or Human Resources for questions about residency requirements and expectations for internships versus other circumstances.

Once in Candidacy, a student is required to have a minimum of three more quarters in residence before defending a thesis. If a student is out of residence for more than 2 consecutive quarters at any point in Candidacy, approval of the DGS, in addition to that of the advisor, is required to continue the absence. Important notes:

- Out of residence status is separate from All But Thesis status described below.
- Students must be mindful that even when out of residence, they must meet the minimum requirements for in-person contact hours (Section 4.1) to maintain full-time enrollment status, receive academic credit, and for students on visas, to maintain their visa status. Students considering being out-of-residence should consult their advisor(s), ADGS and the International Affairs Office to determine what steps they may need to take to meet these requirements.

Besides the formal residency requirements, it is expected that TTIC students maintain a meaningful presence at the Institute during their studies. This means frequent physical presence in the building, substantial attendance of talks (including, among others, TTIC Colloquium, Distinguished Lectures, Young Researcher Seminar Series, faculty candidate talks, and thesis defenses), participation in relevant reading groups, and participating in the intellectual life of the Institute community in other, less formalized/tangible ways.

3. Student Status, Evaluation, and Feedback

The **academic status** of TTIC students is determined by their progress through the program and their success in meeting the program requirements in a timely manner.

- **Good academic standing:** This status is maintained by a student who has to-date met all program requirements, including those specified in this Guide and any additional requirements indicated to the student by the DGS in writing, by the associated deadlines, and has registered for courses in the current quarter by the specified deadline.
- **Academic Probation:** This status is typically imposed when a student fails to meet program requirements as specified in the Academic Program Guide, or any additional requirement indicated and communicated to the student in writing by the DGS, by the deadline specified for a given requirement. It may also result from disciplinary or other procedures outlined in the Student Handbook and other TTIC policies. Academic Probation results in a 50% reduction in stipend and continues until stipulated requirements have been met.

When Probation becomes active, the student is notified immediately and is informed of the steps necessary to return to good standing, and the deadline by which these steps must be completed. If the steps are completed by the deadline, the student resumes being in good standing, and will receive the withheld portion of the stipend in a future payroll.

The student on Probation may petition the DGS to extend Probation by one more quarter (to avoid triggering Suspension). Such extension must be requested before the deadline stipulated in the original Probation notice, and will be granted only in rare circumstances.

- **Suspension:** In some circumstances, the student may be Suspended by the decision of the Faculty, as a result of a failure to resolve Probation, or as a result from disciplinary or other procedures outlined in the [Student Handbook](#) and other TTIC policies. Suspension means the student's TTIC and University of Chicago privileges are suspended, along with the student's stipend, and the student's registration for any course(s) is canceled. Suspension becomes active on a date specified in the Suspension Notice, which may be the first day after the quarter in which

it is issued (when triggered by failure to meet program requirements) or immediate (in some disciplinary action cases). The steps necessary to return from Suspension, if available, will be outlined in the Suspension Notice.

- **Termination:** The Faculty may determine that the circumstances warrant termination from the program. This may be in case of failure to resolve Probation, or failure to qualify for Candidacy. The student will be notified of the termination of their participation in the program, with the notice indicating the last date of their participation in the program, and any additional pertinent information. In contrast to Suspension, Termination does not provide for a path to return to the program.

Probation, Suspension or Termination may be imposed as a result of non-compliance with other relevant Institute policies or procedures, or as prescribed in the [Student Handbook](#).

The **enrollment status** of students in the PhD program can be one of the following:

- **Full Time Enrollment-** 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 would be considered a full-time workload. A student must be enrolled in at least one course (100 units) each quarter, for a letter grade, to be considered full-time. A full-time internship is an exception: it is considered full-time enrollment, but does not receive a letter grade nor awards credits. (Students who expect to not meet the full-time status requirement should consult Human Resources to consider stipend, U-SHIP and visa implications.)
- **All But Thesis (ABT)-** This status may be accorded to a student whose only remaining requirements for graduation are the defense and/or final submission of their thesis, and who do not intend to continue attending TTIC as active in-residence students and enrolling in courses while finishing these requirements. Once a student has successfully proposed a thesis, ABT status may be requested and must be approved by both the thesis advisor and the DGS. A student will register for this status, as they would a course during the registration period, and notify the Registrar (via [Out of Residence Form](#)) if they will not be in-residence.

Stipend support concludes once enrolled in ABT status. An exception may be requested, granted at the discretion of the DGS.

In-residence students may still receive health insurance for the duration of that academic year, and campus privileges, and are expected to physically be at TTIC. Non-residence students will not receive campus privileges. It is the student's responsibility to confirm the details of his or her ABT status privileges. A student may remain in ABT status for a maximum time of four quarters. After four quarters, the student's participation in the program is terminated, unless they petition the DGS to remain a Candidate. Any petition must be submitted to the DGS before the allowed time of four quarters ends, and it should be understood that approval of such a petition is not guaranteed.

- **Leave of Absence (LOA)-** This status applies to students who have arranged an "interruption" to their ongoing study at the Institute, for a designated allowance of time. LOA may further be classified into Voluntary LOA and Involuntary LOA. All terms of a LOA will be documented between the student and the Institute. Details are included in the [Voluntary LOA Policy](#) on DocTract.

3.1 Academic Evaluation and Feedback

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

Twice a year, in the Autumn and Spring Quarters, the faculty hold a review and evaluation meeting to discuss each student's standing and progress in the program. Before each of these meetings, students are notified to complete a Student Data Form and update their progress toward degree completion, revisit personal goals, identify any challenges, and update publication lists. Students are expected to discuss their responses to the form with their advisors, allowing the advisor and student to have a mutual understanding

of the student's progress and plans, and the advisor can accurately represent the student's standing in the program and, if needed, advocate for the student to the rest of the faculty in the evaluation meeting.

During the meeting the faculty and the ADGS review each student's achievements and progress, as well as any outstanding requirements not met in a timely manner and the anticipated future issues. This discussion may result in issuing specific recommendations for the student, expressing concerns, placing the student on Probation, notifying the student of Suspension, issuing a warning about possible termination, and in cases of particularly severe and, in the opinion of the faculty, unresolvable problems with meeting the program requirements, notification of termination of the student's participation in the program.

A **letter of evaluation** is written to each student by their advisor (except after the Autumn evaluation meeting for students in their first year in the program), based on the discussion in the meeting, to be signed by the advisor and the DGS. If the letter includes a requirement to meet with the DGS to discuss the content of the letter and the plans to address any concerns expressed in it, the student is expected to arrange such a meeting in a timely manner, following the instructions in the letter.

TTIC has a full Institute [Assessment Plan](#) viewable on DocTract, which encompasses both summative and formative student and program assessment practices and allows faculty to support student progress toward degree completion and maintain an evolving, high quality PhD program.

4. Courses and grades

A list of current and upcoming TTIC courses, along with information on instructors, course details, and pre-requisites is maintained on the TTIC website (www.ttic.edu/courses). The courses available to TTIC students (including both TTIC and University courses) are organized into five lists, referred to in course requirements for various stages of the program. The mapping between courses offered at TTIC and the lists is found in the TTIC course list available at the Registrar website.

List A: Core courses. Required for every TTIC student to advance to Candidacy (unless an exemption is approved, see Section 4.4).

List B: Depth electives. Every student must take a number of classes from this list (and/or courses from B.1) before Candidacy and possibly more before graduation.

List B.1: Application electives. Every student must take at least 100 units to be eligible to graduate.

List C: Supporting classes in the student's research area, approved by the advisor. These are graduate-level classes not included on lists A/B/B.1/D, typically University classes (often from CS, Math, Statistics, but sometimes from other departments) consisting of coursework and/or a project and/or an exam, awarding 100 units. Reading classes, pass/fail classes or special topics classes will not generally be approved. Inclusion in List C of a course that has not officially been included hitherto requires approval by DGS. If a list designation for a course changes after the course was taken, the designation existing at the time when it was taken will apply when determining whether a requirement was met.

List D: Research-supporting class designations: TTIC 55000 Independent Research, TTIC 56000 Independent Reading, and TTIC 40000 Special Topics Courses.

4.1 Credits

The "course unit" is the measure of academic (coursework) credit at TTIC. Regular TTIC and University of Chicago courses typically award 100 units. Some courses may award a different number of units (e.g., a narrowly specialized topics class may award 50 units). It is common for universities in the U.S. to measure courseload in canonical "semester hours" or "quarter hours" Each standard 100-unit course is roughly equivalent to 5 quarter hours on that, somewhat abstract, scale. In practice, the time commitment required to succeed in courses varies by course and by student, but a typical range for TTIC courses is 10-15 hours

a week, including attending lectures, tutorials and office hours, and working on assignments, projects, and exam preparation.

TTIC determines course credits as part of its Curriculum Review process. The University maintains a similar course credit allocation mechanism and determines the credits awarded for each University course, which are used by TTIC Registrar for awarding credit for University courses taken.

For the course units to be credited towards any requirements, the student must earn a passing grade (and in some cases meet a more stringent grade threshold). (See Section 4.3 on Grades)

In person interaction with instructors

Instruction may be performed via some mix of in-person, remote, and asynchronous modalities, but should maintain that at least 50% of the contact hours must be conducted in person. In cases of advisor sabbatical or other circumstances which require an advisor or instructor to be away (e.g., when a student is registered for an Independent Research class with the advisor), a secondary or local advisor may be assigned to perform contact hour interactions. Note that these requirements apply to all students enrolled in the program, regardless of their residency status discussed in Section 2.2.

F-1 and J-1 student visa holders may have additional modality requirements that they need to abide by to maintain visa compliance. Instructors, advisors and student visa holders are encouraged to coordinate with the International Affairs office.

TTIC curriculum and delivery adhere to the [Credits Policy](#), available on DocTract.

4.2 Registering for Courses

A list of active courses a student may register for will be accessible inside Populi (<https://ttic.populiweb.com>) or my.uchicago.edu while registration periods are open. The academic year annual course list is on the TTIC website: www.ttic.edu/courses

Requirements

Each quarter, to maintain full-time status, **students are required to register for at least 100 units, receiving a letter grade**, during the early registration period which begins four weeks prior to the start of the quarter. Students must receive a letter grade for a minimum of one course each quarter (excluding quarters in which they are registered for an Internship or ABT). Pass, Audit or Withdraw courses do not qualify. Students are expected to consult their advisor and, if necessary, the DGS regarding the number and selection of courses, **prior to registration each quarter**.

A student whose enrollment drops below full-time, (not registered for a minimum of 1 course) will be considered to be inactive, and will be placed on Academic Probation. The student must then petition the DGS to register for a course(s) to move out of Academic Probation. If the student is allowed to register and resume active status, the student will be restored to good academic standing.

To register, students login to their TTIC Populi account (<https://ttic.populiweb.com>) and enroll in courses (both TTIC and UChicago courses) for the upcoming quarter. Populi registration portal may be accessed from the [Registrar site](#). Quarterly registrations must be approved by advisors to be valid. An advisor will notify a student with instructions if an adjustment is required.

If the student is registering for University of Chicago courses (such as CMSC, MATH, STAT courses,) the student *must also register at classes.uchicago.edu*, the University of Chicago student registration system, using their cNet ID. Credit may not be awarded if the student is not enrolled for UChicago in the UChicago system. This includes Independent Research courses with university faculty.

If Populi does not display a UChicago course the student intends to register for, the student should notify the TTIC Registrar of the course number, name, section number and instructor, and the Registrar will apply this to Populi for the student to complete the registration. A student may request TTIC Registrar assistance in any case of difficulty registering in a University course. If the student plans to use the newly added course to satisfy a List C requirement, the student must confirm with the Registrar that the course is on List C. If

needed, the Registrar will request DGS's approval for adding the course to List C. Since such approval may take time, and may be declined, it is recommended that the student check course's inclusion in List C, and inform the Registrar about plans for enrolling if it is not included, well before the registration deadline for the course.

Registration Block

A registration block may be imposed to restrict registration for the next quarter if a student has not completed a required action. The registration block is lifted with completion of the task documented in the registration block notes.

Add/Drop

The Add/Drop deadline is Friday of week 3 each quarter. Changes to registrations are not permitted after that. Students use the Populi portal to Add/ Drop, the same as how they registered. Dropped classes are not reflected on transcripts. After the Add/Drop period, if a student cannot complete the requirements of a course, the options available are:

- 1) Request a *Withdraw* from the course instructor at any time prior to the last assignment, test or day of the course, (with a W recorded on the transcript) or
- 2) Receive an "*Incomplete*" for a grade if all required coursework and/or tests are not completed, with the intention to complete the work.

All changes in UChicago course enrollment status should be reported in Populi. The implications of withdrawals and incompletes are stated in the Grades section 4.3 below.

Students may "shop for courses": sit in on a number of classes at the beginning of each quarter, without officially registering for them. However, they must decide by the Add/Drop date whether they will register for the course. If they do register, they are required to have fulfilled all course requirements, including any assignments, tests, projects, etc., that were assigned from the beginning of the quarter. Thus while a student is considering registering for a course, they should do and submit the work as if they were already registered.

4.3 Grades

All core required courses as identified in the PhD curriculum require a letter grade in order to receive credit toward program requirements. 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. A passing letter grade is a D or above.

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 or audit designation in a letter-grading system, they must attain that status or request such by the end of week 5 of the quarter.

Instructors submit final grades to the TTIC Registrar the Wednesday following the end of Autumn, Winter, Spring and Summer quarters. For University of Chicago courses, grades are typically submitted the Tuesday following the end of the quarter.

TTIC uses the following grades:

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
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The full [Grades Policy](#) for Instructors can be found on DocTract. University of Chicago grade policy can be found through the University Registrar website (but may vary slightly by department).

Pass/Fail: If a student is requesting a pass/fail grade for an elective course, they must obtain that status **before the end of week 5** of the quarter. "P" grade (Pass) indicates that the student has submitted sufficient evidence to receive a passing grade, as determined by the course instructor. Pass/Fail grade option should be used rarely, as this grading outcome does not count towards any program requirements. Requests for

pass/fail should be made directly with the course instructor as should the terms for achieving “sufficient evidence to receive a passing grade.”

Auditing means attending a class without receiving academic credit or a letter grade. Auditors must inform the instructor of their plan to audit the class, obtain permission, and clarify the extent of participation expected of them. If a student is requesting audit status for a course, they must obtain that status **before the end of week 5** of the quarter. Grade “AUD” is reported on the transcript but does not count towards any program requirements and does not award credits.

Incomplete: 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 instructor may give an “I” (Incomplete) rather than a grade, and this shall be recorded in the student’s academic record. The “I” will remain on the student’s record until such time as he/she completes the coursework, and a new grade is submitted to the Registrar by the instructor, but no longer than one quarter after the course concludes. If coursework is not completed by the end of the following quarter, the grade automatically becomes a “W” withdraw (see below).

Withdraw: A student may drop a course in the first three weeks of the quarter and it will not appear on his or her transcript. After week 3, 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. A permanent grade notation of “W” (withdraw) is automatically recorded on the student’s transcript for that course. The TTIC Registrar must be notified if a withdraw has been elected by the student.

Students should check with Institute officials before withdrawing from a class which could potentially place them below full-time status, resulting in being ineligible for stipend support, or for international students on an F1/J1 visa, violating their legal status.

Grade change requests: If a student requests that a course grade be changed after final grades are posted, they may petition the course instructor for a grade change, based on extra study, an exam, a project, or other arrangements as determined by the instructor. Students should petition in writing to the instructor who taught the course in the quarter in which the student received their current grade. The decision on whether to allow such an arrangement, and the exact mechanism for its fulfillment, are subject to the discretion of the instructor, and can not be appealed. (Note that only ‘letter grade’ changes are permissible after a quarter has concluded: grades cannot be updated to a Pass/Fail, Withdraw, or Audit after the quarter has finished, nor can a Withdraw be updated to a letter grade at any point.) The instructor must file the grade change through the TTIC Registrar. Grade changes should not be expected and will be considered only in special circumstances.

No grade changes are permitted after a student graduates or permanently exits their program of study, except under highly extenuating circumstances. Requests for such changes must be approved by the Registrar and the DGS before being considered (and possibly approved) by the instructor.

Re-taking a course: If a student re-takes a course and receives a new grade, both grades will appear in the transcript, in their respective academic quarter listings, with the most recent grade applied towards the program requirements. Re-taking a class requires written approval by the DGS, obtained prior to the Add/Drop deadline.

4.4 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 completed in the student’s first year at TTIC using a [Course Exemption Request Form](#) from the Registrar website, and should be submitted to the TTIC instructor scheduled to teach the course. Course exemption is decided on a case-by-case basis. Such exemptions will be noted in the Populi degree audit as a “waiver”. Even if such exemptions are granted, the student is still required to complete the 500 units from Lists A, B and B.1 by the end of their sixth quarter in the program (typically Winter Quarter of their second year) by taking additional course(s) from List B or B.1.

4.5 Transfer Student Course Requirements

Students transferring to TTIC from programs leading to a PhD 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 PhD, but not for terminal Master's programs.

In cases where a TTIC student received University of Chicago transcribed credit for a TTIC List B or B.1 course, the course credits and grade will be accepted as transfer credit (regardless of if taken as an undergrad or graduate student). Courses on TTIC's List A courses may be requested for Exemption (see section 4.4 above) and if awarded, will not count towards grade or course requirements.

The maximum transfer credit allowance is 300 units (even when using TTIC courses).

The request for credit should be made during the first quarter at TTIC using the [Transfer Credit Request Form](#). Credit awarded will be determined by the DGS in consultation with faculty who oversee courses related to those submitted for credit approval, with the decision made on a case-by-case basis. If transfer credit is approved, up to 100 units per course is awarded towards the 1000 units degree requirement.

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

Course Units Transferred (from other institution)	TTIC Units Prior to Qual. Exam (student must still take)	Adjusted Grade Requirement (for TTIC courses taken)
100	400	One grade below A- is allowed
200	300	All grades must be a minimum of A-
300	200	All grades must be a minimum of A-

In cases where a student took a course at TTIC as a non-degree student, and later matriculates, the credits shall be eligible for transfer credit subject to approval of the transfer request.

4.6 Credit for external courses taken during the program

Select high quality courses and external special programs with highly qualified instructors and researchers may offer exceptional supplemental learning and experience, and students may request credit for such courses taken during their enrollment in the PhD program. The External Course Credit Policy covers the rules and limitations for requesting such credit. If approved, external course credits may be applied toward degree requirements, but may not replace required List A, B, B.1 or C unit requirements.

4.7 Computer Science Internships

Internships can play a crucial role in a student's professional development, providing a valuable opportunity to gain relevant experience, and to get a realistic perspective on what it is like to work within a given field outside of the student-advisor academic dynamic.

TTIC 57000 Computer Science Internship is described as: In-depth involvement in areas of computer science in a research lab, University or business setting. Internship activities and objectives must be related to the student's program objectives. Advisor's consent is required. (F-1 visa holders are required to apply for an appropriate work authorization with the TTIC International Office.)

Students wishing to enroll in an internship should pay attention to the Residency Requirements section 2.2 of this guide, and discuss options with their advisor and/or the ADGS. Note: some student privileges are based on being in-residence. An Internship registration is for a 3-month period: an academic quarter.

To embark on an internship, a student must:

- No less than **six weeks prior to the proposed internship**, complete the [Internship Notification Form](#) found on the TTIC Registrar site.
- Register for TTIC 57000 (or TTIC 57005) during the open registration period for the quarter in which the internship occurs. If the Internship Notification form is ultimately not approved by the ADGS, the enrollment in TTIC 57000 will be cancelled.

If the internship duration straddles two quarters, or is scheduled for only part of a quarter, the student may need to enroll in an additional course to maintain full enrollment status. In such cases the student should consult ADGS. In cases of a part-time internship (TTIC 57005), registering in an additional course is required to maintain full-time status.

International students should inquire with the International Office early in advance of exploring an internship and have all documentation in order so the employment arrangement may take place on time.

To request an internship exceeding one quarter, or an extension to an existing internship, a student shall petition the DGS at least 6 weeks prior to the start of the first quarter in which the internship shall take place. The DGS will consult with the advisor, Registrar (and International Office if CPT is used) and determine approval.

Student privileges while on internship depend on the residency status of the student at the time.

In-residence:

Students staying in Chicago (and up to 50 miles from TTIC) will maintain in-residence student privileges, including campus privileges, and building access. U-SHIP student health insurance coverage continues, if the student was enrolled prior to the internship.

Out-of-residence:

Students who are 50 miles or more from TTIC **must report themselves out of residence** via the Registrar site [Out-of-residence form](#). While not in-residence, some on-campus privileges for the quarter will be terminated, and resume with your return to campus. Consult the TTIC Registrar if you may require campus privileges during a not-in-residence internship. U-SHIP student health insurance coverage continues, if the student was enrolled prior to the internship.

Failure to report yourself out-of-residence will result in the student being charged the campus Student Service Fees that were incurred for the quarter the student was absent from campus. (Consult TTIC Student Services with questions.)

Payment:

Students who are paid as a full-time intern are paid by the internship host, and the TTIC stipend resumes when the student resumes study at TTIC. Students who are paid as a part-time intern should consult with TTIC Human Resources to determine if they are stipend-eligible for the period of the internship. Consult the [Student Funding Policy](#) section 4.c.

Internship Credits

TTIC 57000 Computer Science Internship does not award credits, and does not count towards any course requirement. Registration for TTIC 57000 (with the workload of 20-40 hours per week) is sufficient to maintain full-time status. If a student wishes to enroll in an additional TTIC course while being on full-time internship, such enrollment must be explicitly approved by the instructor and by the DGS.

TTIC 57005 Part-Time Internship does not award credits, and does not count towards any course requirement. This is an internship that requires engagement of less than 20 hours per week. The student remains in-residence at TTIC. Advisor approval is required. A student must register for a course in addition to TTIC 57005 in order to maintain full-time status.

5. Pre-Candidacy Requirements

The requirements below are stipulated on the timeline counted from the beginning of a student's enrollment in the program. Most students begin the program in the Autumn Quarter, so their sixth quarter is typically Winter of the 2nd year, and eighth quarter is the second Summer. If a student defers the start in the program to a later quarter, the timeline shifts accordingly. For example, if a student starts in Winter of 2026, the deadline to apply for candidacy is the end of Autumn 2027.

TTIC does not offer a terminal Master's program. Students who fulfill the requirements as discussed below during the Pre-Candidacy period may receive an accredited Master's diploma before continuing on to become a PhD Candidate. The timeline outlined in Section 2 includes a number of requirements which are further defined in this section.

5.1 Responsible Conduct of Research Training

Within 30 days of initial enrollment at TTIC (or prior to enrollment), a student must successfully complete Responsible Conduct of Research (RCR) training. TTIC's objective through student RCR training is to inform about the basic rules that apply to responsibly conduct research- such as ethical considerations when performing research, or the permitted use of research funding, and so on. RCR training is designed to provide the student research community with knowledge about expectations and protocol, enabling each member to be responsible in an academic research community. Candidacy will involve more independent research, and the training is a first step in preparation.

At TTIC, RCR training is completed online through the CITI program. Students must take the online course, and pass a quiz on the material, passing with an 80% or better. Test results will be relayed to the Office of the Registrar, and results are valid for up to ten years. Instructions for completing training may be found on the [Registrar website](#).

Students that do not successfully pass training within 30 days will be placed on Academic Probation. Academic Probation results in a 50% reduction in stipend and continues until stipulated requirements have been met.

5.2 Pre-Candidacy Course Requirements

During the Pre-Candidacy period, a student must complete the following course requirements, for the total of 1000 units:

- 300 units from List A
- 200 more units between lists B and B.1.
- 500 more units between lists B, B.1, C, and/or D.

The 500 units from list A, B and B.1 must be completed before taking the Qualifying Exam (Section 6). Of these, three courses must have letter grades of A- or better, and the remaining two courses must have letter grades of B- or better. In the remaining 500 units, at least two grades must be B- or better, and the rest can be any passing grades. (See Section 4.4, 4.5 for exemption and transfer credit information.)

5.3 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 Requirement Administrator." 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 Requirement Administrator for approval. ***This requirement must be fulfilled before applying for the Qualifying Exam.***

5.4 Research at TTIC Seminar Requirement

TTIC professors are constantly re-examining the boundaries of computer science, expanding their areas of study, and publishing new insight for the consumption of computer scientists around the globe. Much of this research is presented during the Research at TTIC seminars, where professors talk about their most current research. TTIC's Research at TTIC Seminar Requirement requires students to register for course "TTIC 31000: Research at TTIC" and attend these seminars in their first Autumn, Winter and Spring quarters at TTIC. Students receive a pass/fail grade. Three quarters with a "pass" grade constitutes fulfillment of the requirement. This requirement is intended to familiarize students with emerging areas of computer science and promote the opportunity for engagement with faculty and visitors who may play a role in the students' future research endeavors. Seminars are typically on Fridays. Students are expected to attend all seminars to gain awareness and exposure to emerging areas of computer science, outside their immediate area of study.

6. Qualifying Exam

The goal of the Qualifying Exam is to allow the student to demonstrate their ability to absorb, summarize, present, and apply new research and/or technical ideas, as well as apply them in the context of key concepts in TTIC List A and B core courses. By passing the Qualifying Exam a student demonstrates the readiness and competence to undertake thesis-level research.

The student is given reading material which may require understanding some concepts outside of their immediate research area, but typically in an adjacent area. The student is required to submit a written summary of the material they were assigned, give a presentation based on the assigned material, and answer any exam committee questions about the material. Students are evaluated on their ability to reason about and explain the given material, apply the concepts discussed in the material, and position the work at hand within the context of the research field. The written component tests the student's ability to extract, organize and explain technical ideas in a logical manner. The oral component includes questions during the exam that test students' ability to extrapolate and apply the concepts from the given material and the courses mentioned in the exam form, to answer in-depth questions, and to "think on their feet".

6.1 Exam Eligibility

It is recommended that a student apply for the exam as soon as they are eligible to apply, without delay.

Five core courses (meeting the grade requirement) and the Programming Requirement must be completed before the ***initial exam application is submitted, by the end of week 2 of the Spring Quarter of the student's second year.*** Students who join TTIC at a quarter other than autumn quarter shall be informed of alternate Qualifying Exam deadlines in their first formal evaluation letter after enrollment.

Extensions for special circumstances can only be approved by the DGS, and must be confirmed *before* the week 2 deadline, to avoid Probation. Note that this is an exception to the usual six week notice required for petitions.

The Registrar site's 'Qualifying Exam' page allows access to the [Qualifying Exam Application Form](#), lists specific exam deadline dates for the current year, and application instructions for the student.

6.2 Exam Committees and Student Activity Prior to Exam

Once a student applies for the exam, the DGS will appoint a three-person Exam Committee with an Exam Chair for each exam, and the ADGS will inform the student about the composition of the committee. **Prior to the end of week 8 of Spring Quarter**, the student should coordinate with the committee and schedule an exam at a time convenient for all parties, report the exam date to the Registrar, and reserve a conference room. It is recommended to take the exam by week 2 of Summer Quarter.

Six weeks before the scheduled exam, the student must submit the exam forms to the Exam Chair. The Exam Chair will assign and document the exam material on exam forms (typically a single research paper or a chapter from an advanced text), and return the form to the student, giving the student at least four weeks to prepare.

One week before the exam, the student shall submit a written summary of the readings to the Exam Chair. The Exam Chair will distribute it to the other committee members, and the Registrar.

All exams must be passed by week 8 of Summer Quarter, when Candidacy Applications are due. This includes continuation and/or re-taken exams. If scheduling constraints prevent this deadline being met, the student must petition the DGS for an extension like with any other deadline.

6.3 Exam Format

- One week before the date of the exam, the student is required to submit the **written summary** of at most 4 pages to the exam committee. The summary may also include a description of any results or concepts not covered in assigned material that the student believes helpful in understanding the material. The committee decides as a group, the quality of the summary, and it's noted formally on the exam forms. The committee may communicate (informally) with the student prior to the exam regarding the summary, and can give feedback, or caution a student if understanding of the material may need further work. Students should summarize their understanding of the assigned material in their own words and may not copy any material directly from the paper or other sources. If something needs to be quoted (e.g. a theorem statement) a reference should be included.
- The exam consists of a **presentation** by the student based on the reading material (and any other concepts/results necessary for context), and **questions from the exam committee**. Students may use a whiteboard or digital slides for presentation. The length of the planned presentation should be limited to 45 minutes. The committee may interrupt with questions during the presentation and may ask additional questions after the presentation. These may include questions directly based on the content, or on applying some of the concepts to a different problem. The questions may also test the knowledge of concepts covered in the List A and List B courses taken by the student.

6.4 Exam Outcome

The examiners must reach consensus on the outcome of the exam, and mark the outcome on the exam itself, which the student will provide at the exam. Possible outcomes are:

- Full pass. This results in a recommendation to continue in the PhD Program.

- **Continuation.** A continuation means that the student has not yet passed the exam and must still complete it before continuing in the PhD program. A continuation of the examination must be scheduled with the same committee and possibly with additional reading material; the date of the continuation is at the discretion of the exam committee and the student, but an effort must be made to schedule the continuation within eight weeks from the initial exam. A continuation exam cannot result in a second continuation or conditional pass. The outcome of continuation must be either pass or non-pass.
- **Conditional Pass.** A conditional pass may be given when the committee requires that the student provide additional work, but does not see the need in another exam. The committee then provides the student with a list of requirements that the student should fulfill to pass the exam, and a time-frame for doing so. Examples of such requirements include submitting an additional/improved/expanded writeup, giving a public talk, or taking a specific class with a grade above a certain level; other requirements are possible at the discretion of the committee. A conditional pass is updated to a pass or non-pass after the deadline given by the committee. Conditional pass allows the student to continue in the program and (if eligible) to apply for Master's diploma. The student must obtain the committee's written confirmation, on the Qualifying Exam form, that the conditions have been met to become eligible to apply for Candidacy.
- **Non-pass.** If a student fails the qualifying exam, they must leave the PhD program or petition the DGS to continue in the program and retake the exam. The exam committee also gives a recommendation on whether the student should be permitted to retake the exam. However, this is only a recommendation. If a student would like to retake the exam, the student needs to petition the DGS to retake the exam to continue in the program.

If the DGS approves, a new exam committee is appointed by the DGS and the student initiates contact and exam scheduling with the new committee and goes through steps as if it were an initial exam. The new committee receives the full record from the previous exam(s), and may choose new exam material or stay with the one assigned in the preceding exam(s).

All exams must be passed by week 8 of Summer Quarter, when Candidacy Applications are due. This includes continuation and/or re-taken exams (see Section 7). If scheduling constraints prevent this deadline being met, the student must petition the DGS for an extension like with any other deadline.

6.6 Exam Committee Feedback

The exam committee will provide formal feedback orally to the student regarding their performance in the exam, and all members of the committee are responsible for completing the exam feedback form itself, which will become part of the student's academic record at TTIC, and indicates exam outcome. The student provides this form to the committee at the time of exam. Forms should be completed by the exam committee and submitted to the Registrar on the same date as the exam.

The committee feedback becomes a part of the student's academic record, and parts of it are shared with the student.

If the exam committee determines a Continuation Exam is necessary, the oral feedback and feedback on the exam forms should be focused to advise the student on improvements to perform or prepare better on the continuance exam.

7. Application for Master's Diploma/Candidacy

After passing the Qualifying Exam and completing all requirements of Pre-Candidacy (see sections 5 and 6), a student may **apply for Master's + Candidacy** by the end of **week 8 of Summer Quarter** (typically of their second year of study), submitting the [Application for Master's + Candidacy](#) to the TTIC Registrar. An accepted Application for Master's + Candidacy qualifies a student for a Master's within the PhD Program

and their case will go before a faculty vote to be approved for Candidacy. Master's diplomas are awarded each fall at the beginning of the academic year (usually late September). Students whose applications are accepted and will be awarded diplomas will be notified during the summer of the exact date of the diploma ceremony.

Alternatively, If a student does not yet qualify for Candidacy, they may still be eligible and meet the requirements to apply for the Master's within the PhD program diploma if they have satisfied the following requirements:

List A	300 units	<i>400 of the 500 units should have grades of B- or better. Remaining units must have passing letter grades of D or higher: "P" pass grades will not qualify.</i>
List B or B.1	200 units	
List B, B.1, C, D	500 more units	<i>All 500 units must have passing grades of D or higher. "P" pass qualifies.</i>
	10 courses/ 1000 units	<i>Passing grade in most courses earns 100 units. (Exception: TTIC 31000 Research at TTIC, TTIC 57000 Computer Science Internship, and some Special Topics courses.)</i>

The (non-Candidacy) [Application for Master's within the PhD Program](#) is due by the end of **week 8 of Summer Quarter** to the TTIC Registrar.

Any requests for an extension to meeting the Master's or Master's + Candidacy Application deadline must be submitted in writing to the DGS by week 8 of Summer Quarter, the same as the Master's and Master's + Candidacy Application deadline. Note that this is an exception to the usual six week notice required for petitions.

7.1 Candidacy

Approval for Candidacy indicates that a student is moving into a more advanced stage of the PhD Program, the main focus of which is conducting research and writing a thesis.

Admission to the PhD program does not automatically include approval of Candidacy. The faculty will evaluate the progress of the student, review their Application for Candidacy (section 7) and determine that the student has met all requirements and is otherwise qualified to do work at a level required to complete a doctoral thesis.

To become a PhD Candidate and therefore allowed to continue in the program, a student must have completed:

- 1000 course units meeting the grade standards (section 5.2)
- Programming requirement (section 5.3)
- Research at TTIC Seminar requirement (section 5.4)
- Passed the Qualifying Exam (section 6)
- Completed Responsible Conduct in Research training (section 5.1)
- Have a research advisor willing to supervise the student's PhD thesis work (section 7.2 below)

Applications for Candidacy are reviewed and approved at a student evaluation meeting (typically during Autumn Quarter of a student's third year) via faculty vote. If all requirements are met, and Candidacy is approved by faculty, the DGS will officially notify the student in writing that they have become a PhD Candidate.

If Candidacy has not been approved by the end of the Autumn Quarter of a student's third year, and no special arrangements have been approved by the DGS, the student's participation in the program will be terminated (see Section 3).

7.2 Research Advisor Commitment

The relationship between a student and their advisor is a central aspect of the PhD program. This relationship requires the ongoing consent of both parties - either party can withdraw from a PhD research advising relationship by notifying the CAO and the DGS.

As part of the Application for Candidacy, the student must select a research advisor and request the advisor confirm the arrangement with a signature on the application. An advisor will steer a student through the process of determining when research is reaching milestones that indicate it may be thesis proposal and defense time, will work with the thesis committee to determine the thesis' overall quality of research and thesis; scope of the research; extent of novel contribution; significance of research; completeness of thesis (adequate background, literature survey, experiments, etc.); quality of writing; quality of oral presentation. An advisor may provide insight into plotting a course for a career beyond graduation.

It is important to make sure that the student and the prospective Research Advisor (who often is the Interim Advisor assigned to the student upon starting the program, but does not have to be) have an understanding about the expected commitment well before the Candidacy application deadline. Finding the right advisor is a major part of the pre-Candidacy stage, it may take time and effort, and may require exploring research directions with multiple faculty members.

8. Additional Post-Candidacy Requirements

TTIC defines its goal outcomes for PhD graduates as follows:

- The student understands and can conduct high quality, responsible and original research culminating in a doctoral thesis which can be successfully defended in a public forum and published.
- The student is experienced in course instruction and course management activity.

Towards this end, PhD Candidates must fulfill a number of requirements beyond those already met on the road to Candidacy.

8.1 Graduation Course Requirements and Application Requirement

Students are required to take a total of 1300 course units for partial fulfillment of the requirements for the PhD degree. Of these, 1000 units are to be completed before Candidacy (see Section 5.2). Additional course requirement:

- 300 more credits from three Lists B,B.1,C courses taken any time before graduation; all must have grades of B- or better.

A student may petition the DGS to approve lower grades for courses in List C under special circumstances. Students may petition course instructors for a grade in some instances, following the [Grades Policy](#). Alternatively, the student may choose to repeat the class.

To fulfill the **Application Requirement** of coursework, at least *one* List B.1 course (100 units) must be completed before graduation (either pre- or post-Candidacy), with a final grade of B- or higher. Similar courses taken at another institution will not qualify to fulfill or exempt from this requirement. This may be one of the courses taken to fulfill the overall course requirements, or an additional course.

8.2 Teaching Assistant (TA) Requirement

TTIC students are required to TA at least one quarter before graduating. The goal is for the student to gain experience in the responsibilities of teaching a course, evaluating students, and other instruction-related duties. A student may approach a professor or be approached by a professor to TA. Faculty recognize the value of serving as a TA and understand that research time may be diminished during a quarter during which you TA.

Before the beginning of any quarter in which a student will TA, (to fulfill the requirement or not) the student must report the TA position in a [TA Notice Form](#). There is a place on the form to indicate whether the student plans to use the proposed assignment to complete the TA requirement. The notice form informs the Registrar that the requirement will be in effect that quarter.

To meet the requirement, students may TA for any TTIC course. In rare circumstances, TAing a University course may count towards the requirement; these must be explicitly approved by the DGS.

- If a student wishes to TA a course in which they are enrolled as a student for credit, they must have approval by the DGS prior to the start of the course.
- A student may not use a course in which they are enrolled for credit, to fulfill the TA Requirement.

Upon completion of the quarter, and TA duties, the course instructor is sent a [TA Completion Form](#) and the instructor will indicate if the student satisfactorily completed the TA requirement.

TAs are invited to share feedback on their TA experience with TTIC at the end of the quarter. The feedback is analyzed as part of the institute's annual program assessment review.

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. Student TAs are required to complete online FERPA training through the Office of the Registrar, and awards credentials that expire after three years. FERPA Training completion records (and dates) are applied to a student's Populi profile page.

8.3 Student Talk Requirement

Students of the PhD program gather an intense knowledge base during the program. The Candidacy phase of the program will require students to demonstrate an ability to communicate technical ideas and disseminate their knowledge and findings to fellow students, professors and researchers. To emphasize the value of communication of ideas and knowledge, this requirement has the student exercise their ability to communicate research effectively to a broad audience.

Through the Student Talk Requirement, TTIC students are required to give an advertised talk on research work the student has directly been involved in, to a TTIC audience, before graduating. Students may complete this requirement in Pre-Candidacy, or in Candidacy. This may be at a seminar series, a workshop, a conference, or another venue (typically where several faculty will provide feedback) as approved by the DGS. The student is responsible for ensuring the talk will fulfill the requirement, ensuring the talk is advertised to the "TTIC Talks" mailing list at least two weeks before the talk date (or providing the alternate advertising evidence), and ensuring an announcement is received by the Registrar so as to record fulfilling the requirement. Talks should be at least 15 minutes in length. The student may report completing this requirement by completing the [Talk Requirement Completion Form](#) from the Registrar site. The student's advisor will complete an [Advisor Talk Requirement Confirmation Form](#) online to confirm the talk requirement has satisfactorily been met.

If the talk given was part of the annual Student Workshop event, an event judge who was in attendance may confirm the requirement completion in lieu of the advisor, immediately following the event, also using the [Advisor Talk Requirement Confirmation Form](#).

9. Completion of Degree Requirements

It is expected that students will successfully defend their theses within six years of initial enrollment in the program. To meet this expectation, **PhD Candidates are required to assemble and document a thesis committee by the end of their fourth year at the Institute, and to produce an accepted thesis proposal by the end of their fifth year.**

As with other requirements, a student may request from DGS an extension for either the thesis committee formation or the thesis proposal. Such an extension request must be made by the student at least six weeks prior to the deadline for the requirement, and granting it is at the discretion of the DGS. Such extensions may be approved only when there is demonstrated progress toward meeting the requirement, and there is evidence that the thesis will be completed in a reasonable amount of time.

Students should expect these requirements to be enforced strictly, as they are critical to substantial progress towards degree completion in the post-Candidacy stage.

9.1 Thesis Committee

PhD Candidates are **required to gather and document a thesis committee by the end of their fourth year** at the Institute.

The student's Thesis Committee must consist of at least three faculty members, including 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, adjoint 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 committee always includes the student's advisor(s), who serves as Chair (or co-Chairs) of the committee.

A Thesis Committee member's affiliation at the time they become a valid member of the committee shall be considered to remain valid during the thesis process.

The student must choose their Thesis Committee members and complete the [Thesis Committee Membership Request Form](#) available from the TTIC Registrar site. Completed Membership Forms should be submitted to the Registrar by the deadline for thesis committee formation to meet the requirement.

9.2 Thesis Proposal

PhD Candidates are **required to defend a thesis proposal by the end of their fifth year** at the Institute.

The student presents their thesis proposal orally to the Committee and the Committee either approves or makes recommendations. The student is required to provide the Committee with a written thesis proposal prior to the defense. The student's proposal is evaluated by the committee, and the feedback is provided to the student on a [Thesis Proposal Approval Form](#). The form is prepared by the student, completed by the thesis committee, and submitted to the Registrar to document the completion of the requirement.

There is no specific format or page limits for the proposal document. Typically it is 10-15 pages long.

9.3 Doctoral Thesis and Defense

The institute requires each student to write a Doctoral Thesis that includes significant original research in computer science. The full [Thesis Guide](#) which includes additional policies, a checklist, and timeline for submission are available on the [Registrar website](#).

Students are expected to successfully defend their theses within six years of initial enrollment in the program, but there is no strict requirement for the time of defense, and it is understood that some research journeys last longer than others.

The student must successfully defend their thesis in a public forum before the Thesis Committee and any other interested TTIC community members. An evaluation will be provided to the student both orally and on a [Thesis Defense Evaluation Form](#), by the Thesis Committee, following the defense. The thesis defense may occur **two weeks after the student has given proper notice**. Proper notice consists of the following actions:

- The student must provide a draft of the thesis, approved by the advisor, to each member of the Thesis Committee. The draft must be nearly complete with only minor changes expected in the final version.
- The student must advertise the time and date of the defense along with an abstract in the appropriate TTIC mailing lists in consultation with the Registrar.

The TTIC Registrar or a faculty assistant can assist students with securing a room for the defense.

9.4 Thesis Publication Requirements

TTIC doctoral theses are expected to be original contributions to scholarship. As such, they are made available to the research community, and the public at large, online at arXiv.org (arXiv). Once the final version of the thesis is approved by the committee (via signature on the original Defense Evaluation Form), digitized full text PDF of the thesis and abstract is submitted to the site, and an active link to the submission provided to the TTIC Registrar.

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 may require documentary evidence that the student has obtained all necessary permissions or has made a good faith effort to do so, if applicable.

[The TTIC Thesis Guide](#) thoroughly explains the thesis process, and includes more detail, descriptions and samples, to help students navigate this important set of steps in PhD degree completion. The Thesis Guide is available on the TTIC Registrar website.

9.5 PhD Degree Completion and the Doctoral Diploma

Once a student has completed all requirements for the PhD Program, they will be notified by the Registrar about the date on which the doctoral diploma will be awarded. Diplomas are awarded once a year at the diploma ceremony, typically held in the week preceding Autumn Quarter of each academic year (late September or early October.)

For a graduate to be eligible to participate in the annual Autumn diploma ceremony, final thesis submission (arxiv link and forms signed as “accepted” by the student’s advisor and Chief Academic Officer) with all degree requirements met, must be **completed by August 31**. Students who complete their degrees at any time from September 1 the preceding year through August 31 are invited to participate in the Autumn diploma ceremony.

The date that all requirements have been met and the final thesis arXiv link is submitted to the Registrar is recorded as the ‘degree completion date’. The date of the diploma ceremony appears in the diploma as the ‘degree conferral date’. These dates are noted on any degree verification letters a student requests (Section 10.3).

10. Documentation Provided by TTIC

This section describes policies and procedures for obtaining documentation related to a student's current or past participation in the PhD program.

10.1 Transcripts

Students (of any status who have an active Populi account and have taken at least one course) can access their academic transcripts anytime by logging into Populi and on the 'My Profile' page, select the 'Student' tab. Students may download their own unofficial transcripts, or request an official transcript. The official transcript is processed by the Registrar, and may be hard copy (signed with an embossed seal), or a digital PDF. Transcripts may be sent to third-parties at the student's request via Populi transcript request function.

TTIC does not charge a fee for transcripts.

Requests for official transcripts are typically processed within 2-3 business days. Add additional time for mail delivery of paper copies. Requests are not processed over the weekend or over Institute holidays.

Unofficial transcripts are available for immediate download using the same process for official transcripts.

Academic honors awarded to a student such as Thesis of Distinction, Niyogi Fellowship, and/or Outstanding TA Award shall be noted on transcripts.

10.2 Enrollment Verification Requests

An Enrollment Verification is an official document (or letter) that confirms active enrollment at TTIC, and may list enrollment start date, expected program completion date, any awarded degrees from TTIC, advisor and area of study, or additional information a student specifically requests regarding their student status.

Students may need verification of enrollment to defer student loans, to prove enrollment for an insurance, to verify student status to prospective employers or fellowship opportunities, for visa or immigration purposes or to show proof of academic standing to enroll in another institution. All requests for verification must be submitted by the student through the [Enrolment/ Degree Verification Request Form](#) on the Registrar site (under 'Forms') or in person in the Office of the Registrar.

Verification of directory information (name, address, enrollment date, expected graduation date, student status, and receiving scholarship support) may be released without the student's signature. (If a student has chosen to restrict his or her directory information, a written release from the student is required in order to process the request.)

Any confidential information (such as academic grades, or actual scholarship stipend amount) will only be released with the student's documented request (via the [Enrolment/ Degree Verification Request Form](#) from the Registrar site), in accordance with the Family Educational Rights and Privacy Act of 1974.

Enrollment Verification letters may be in hard copy format, or PDF digital format, and provided to the student or a third-party as dictated by the request form.

10.3 Degree Verification Requests

Degree Verification is an official document (or letter) that confirms a student has completed a degree(s) at the Institute. All requests for verification must be submitted by the student via the [Enrolment/ Degree Verification Request Form](#) from the Registrar site or in person in the Office of the Registrar.

Degree Verification letters may be in hard copy format, or PDF digital format, and provided to the student, or a third-party as dictated by the request form.

10.4 Diplomas

The current [Student Handbook](#) outlines diploma policy at TTIC. The Office of the Registrar assists students and alumni with academic records including diplomas and replacement diplomas.