Human-Computer Interaction Institute

Carnegie Mellon University

HCI Ph.D. Program Policies and Procedures Handbook

Version 3.2

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ABOUT THIS DOCUMENT

This document serves as the handbook for the Carnegie Mellon University Human-Computer Interaction Institute's (HCII) Ph.D. program. It covers details of the Ph.D. program and requirements for completion. Note that there is a companion document which lists the student policies and procedures for all students in the HCII.

PROGRAM OVERVIEW

Introduction to the HCI Ph.D. Program

The Human-Computer Interaction Institute – an interdisciplinary academic department within the School of Computer Science – is one of the world's leading centers for research in Human-Computer Interaction (HCI). Beginning with its first class in the fall of 2000, the HCI Institute began admission of highly qualified students to its Ph.D. program in Human-Computer Interaction. Its graduates are now making a significant impact on the HCI community, with faculty positions in top-ranked academic departments and positions in major industrial research laboratories.

Since HCI encompasses aspects of both people and technology, the Institute takes a strongly interdisciplinary approach. The Institute brings scientific and engineering knowledge from computing together with that of the behavioral sciences (e.g., psychology and the social sciences). Further, in order to produce efficient, effective and pleasing technology, this scientific basis is also combined with the integrative methods of the discipline of design which are directed towards the conception of "total products." Mirroring this diversity, we encourage applicants from a range of disciplines.

Students accepted to the Ph.D. program will participate in the wide-ranging and innovative research programs of the Institute. For an overview of some of the research going on, see our research summary page on the web (http://www.hcii.cmu.edu/Research/research.html). HCI Ph.D. students have access to the excellent computational, and laboratory facilities of the School of Computer Science and the HCI Institute, as well as facilities of the Department of Psychology and the School of Design. These include usability and other laboratory facilities, as well as office space in Newell Simon Hall and University facilities on Craig St. In addition to wide-ranging research opportunities, students

will have the opportunity to explore a rich set of course work and other activities designed to prepare them for a career in HCI research. Requirements for the Ph.D. course of study are designed to accommodate students with a range of backgrounds by providing highly individualized programs of study.

Program Principles and Strategies

The goal of the program is to produce a steady stream of high quality, innovative Ph.D. graduates prepared to do impactful HCI research. Toward this goal, the program seeks to provide each student with depth in some aspect of HCI research, but also to prepare them to smoothly integrate the methods and knowledge from the underlying disciplines as called for by the work, rather than as dictated by disciplinary outlooks.

Three guiding principles are used in structuring and administering the program:

Quality first. We seek quality in everything we do. That is almost a cliché, but taken seriously, it means that the program maintains very high expectations for its students, and communicates that to them early and often. It also means that when there are conflicts between the best education for a particular student and the official rules, or what precedent might be set, a significant effort is made to choose the course that provides the best education for that student. Correspondingly however, exceptions to rules and policies made on this basis are not normally considered to set precedent for other students.

Research from day one. The primary goal of the program is to create world class researchers and it is important that students clearly focus on research from the beginning. To accomplish this, the program requirements are structured to "clear the path" of some of the non-research activities typical of other programs. There are no qualifying or preliminary exams and typically students are not allowed to do teaching work early. Other requirements (such as the communication requirement) are also structured to motivate students to produce research results early. Our program is unique in that we encourage and expect students to engage in research from their first day in the Department.

The reasonable person principle. We believe that quality does not come from rules and structure, but from high standards and a vigorous and exciting environment. Consequently the program has a bare minimum of rules and requirements. Instead, like other parts of the Institute and School, the *reasonable person principle* is employed. This principle says in essence that we should all operate under the assumption that we are reasonable and intelligent adults in a cooperative community, and that we will operate in all situations as a reasonable person would. Everyone is expected to know that the lack of a specific rule is not a license to *game the system*, subvert its intent, or do something outside what any reasonable person would see as right. Also, when something is not clear, a reasonable person asks first.

These guiding principles are supported by a series of strategies which in turn play out in the curriculum and requirements for the program. These include at least:

Highly individualized education. Across the interdisciplinary breadth of the program, students will need to know different things and present themselves differently. At the core, students will undertake problems and questions in the places where people meet technology. To accommodate this, and to allow each student to maximize their own talents and interests, many of the program requirements are individualized. Most notably, within an overall loose framework, the courses taken by each student are proposed by the student and advisor to meet the student's needs. We are committed to the principle that students may achieve competence through a variety of methods, including courses, seminars, projects, and independent study. We consider each student's individual strengths, weaknesses, and interests in designing the best method for the student to fulfill these requirements.

Continuous evaluation. The program has no preliminary, qualifying, or other traditional exams except the dissertation proposal and defense. Instead, every student is evaluated by the full faculty each semester (in a day-long meeting). In addition to maintaining high standards, these evaluations are intended to provide regular feedback on progress and direction. This evaluation process provides guidance from multiple perspectives (beyond that of just the student's advisor(s)) and conversely allows our diverse faculty to compare notes, stay abreast of the activities of the full student body, and create more uniformity in an otherwise fairly unstructured curriculum.

Strong interdisciplinary interaction. Finally, several aspects of the program are structured to attempt to promote the development of strong interdisciplinary interactions among the students. This includes incorporation of an interdisciplinary project in the required introductory course, as well as housing students in mixed shared spaces rather than in advisors' lab spaces during at least the early portions of their study.

The Research-Matching Process in HCII

Carnegie Mellon is a research institution. We are strongly committed to scientific excellence, both in research and education. In particular, we believe that a close personal interaction among students, faculty, and staff is of the utmost importance for educating the next generation of leaders in academia and industry. HCII students are therefore matched to a faculty advisor(s) in the very beginning of the program who will guide their research and advise them in academic matters.

When new HCII Ph.D. students arrive at CMU, they should begin scheduling meetings with faculty with whom they would like to work. We encourage new

students to meet with as many faculty as possible, even faculty they might not have initially thought would be a match. This serves two purposes: helping the faculty get to know you and helping you understand the breadth of research opportunities available to you. Students and faculty are expected to identify a research match near the end of September. Advisors are likely to come from within the HCII, but may come from outside the department as well. A student may be advised by a single faculty member, or co-advised by two faculty members. A student's advisor may change if the research direction changes and there is no longer an appropriate match.

Role of the Advisor:

The faculty advisor is a student's primary contact, both in research and in academic matters. Typically, a student has strong interests in the research area of the faculty advisor, and she/he will closely collaborate with the faculty member. The advisor is typically the primary person directing the student’s research, and is also typically expected to provide financial support (stipend and tuition) for the student.

Overview of Degree Requirements

Based on the guiding principles and strategies for the program, it uses a set of requirements which is fairly loosely structured, especially with respect to coursework. There are seven requirements for graduation: the traditional proposal and defense of a dissertation, a communications requirement, a teaching requirement, coursework, a usability skills requirement, and an external funding application requirement. As indicated above, there are no qualifying exams, nor is there a minor requirement.

The dissertation proposal and defense requirements, along with the written dissertation, are much like most other Ph.D. programs in the United States. The committee which judges these activities is required to be interdisciplinary and must contain at least one external member (who either comes from within the University but outside the HCII, or more commonly from outside the University but within the field of HCI).

The communications requirement is designed to ensure that students can communicate research results well. It is also structured to strongly reinforce the notion of “research from day one”. Students are required in both their first and second years to present their work to an Institute-wide audience. The faculty as a whole evaluates this presentation and the student must be designated as passing the communication requirement once (they must make two presentations, but may make more if needed to receive a “pass”).

To provide some training in the methods and skills of teaching, and to support the educational mission of the Institute, each student is also required to do two classes’ worth of *teaching assistantship* (TA) work. Students are generally

encouraged to do TA work only after they have completed their course requirements.

Course requirements are constructed very loosely in accordance with the strategy of individualized education. Each student must take the equivalent of nine semester-long courses of 9 units or more each:

- The “HCI Process and Theory” course (taught in the first semester),
- four half-semester (or mini) courses covering in-depth background material (in cognitive and social psychology, CS, and design respectively),
- four courses in a primary area, one course in a secondary area, and one course in the third area (where areas are Behavioral Sciences, CS, and Design).

At least one Design course must be a graduate studio course. The exact program of study is designed by the student and advisor(s). However, every program of study must be approved in advance (as part of the semester evaluation process). This allows us to customize the coursework to each student, yet still maintain a comparable set of standards across the program.

In addition to these specific course requirements, each student is required to meet a “usability skills” requirement. This requirement is designed to ensure that all students have at least a basic knowledge of usability practice so that they could, for example, be called on to teach an introductory HCI course.

Finally, there is an external funding application requirement. The mentored experience of writing grant and fellowship applications as a graduate student is viewed as a valuable part of their doctoral education. As such, doctoral students are required to apply for external funding no later than the end of the fourth year of their PhD program. There is no requirement on the amount of the external funding requested or that the proposal results in a successful award.

PROGRAM DETAILS

CORE ACTIVITIES

Research

The HCI Ph.D. program is primarily designed to teach students how to carry out original high quality research in Human-Computer Interaction. To accomplish this, the program uses an apprenticeship-based approach. Each student is teamed early with an initial research advisor (or advising team) who is matched to the student's interests, and guides the student in his/her work. We expect that

all students will become involved in HCI research projects from the beginning, and continue research work as a central activity throughout their course of study. It is the responsibility of both the student and his/her advisor(s) to formulate for each semester a set of reasonable goals, plans and criteria for success in conducting research.

Coursework

HCI Ph.D. students come from a variety of backgrounds spanning the research areas that contribute to Human-Computer Interaction. To accommodate students with these wide ranges of interests, the HCI Ph.D. program of study has been loosely structured around three areas of specialization: behavioral sciences (encompassing, for example, social science, cognitive science, or psychology backgrounds), computer science, and design. However, we also encourage applicants from a variety of other backgrounds.

Conducting research requires a firm grounding in the concepts and prior work of a field. Course work requirements are designed to ensure this firm grounding. Course requirements are structured so that they can typically be completed within the first two and a half years of study. However, students are free to schedule their course work in a variety of ways to accommodate their educational needs, and in some cases, additional prerequisite course work may be needed.

Course Requirements for All Ph.D. students

All programs of study are created individually, but must be approved in advance by both the student's advisor(s) and the faculty (at an Evaluation Meeting).

All programs of study must include:

- HCI Process and Theory (05-771)
- 4 Ph.D.-level HCII minis:
  Cognitive Science Perspectives in HCI (05775)
  Computer Science Perspectives in HCI (05773)
  Design Perspectives in HCI (05774)
  Social Perspectives in HCI (05772)
- 4 graduate level courses in one of the areas of specialization (behavioral science, computer science or design) or a declared area of concentration (see below)
- 1 graduate level course in a second area
- 1 graduate level course in the third area

Among those courses, at least 1 graduate level design studio course must be included. Students also have the option to declare a 4-course concentration in any relevant research area (*e.g.*, HCI & health, learning sciences, social computing). The 4-course concentration must be coherent and agreed to by the student's advisor and by the faculty as part of approving a student's plan of

study. It can cross the behavioral science, computer science and design boundaries. Note that students must take at least one course in each of the three disciplinary areas.

The Ph.D. Program Director will determine, in consultation with faculty specializing in the area, whether or not a particular course meets that area's course requirement.

For examples of possible courses in each area, please see the Companion Guide.

Please keep in mind *that all required courses need to be approved in advance* by your Advisor, as part of your Plan of Study (which is reviewed and approved by the faculty as part of the evaluation process). In determining whether or not a particular course will qualify, the particular student's background and suitability of the course to the particular student's goals, needs, plan of study, as well as future career aspirations will be taken into consideration.

Courses required for specialized interdisciplinary programs, such as the Program for Interdisciplinary Education Research (PIER), can count (concurrently) towards the 4:1:1 course requirements.

In addition to courses indicated above, all students are required to register for 05997 Reading and Research in HCI or 05888 Practicum in HCI each semester. These courses represent the student's research work with their advisor (05997) or as part of an external internship (05888).

Grading

A course must be taken for a letter grade whenever possible. If a course is only offered as pass/fail or satisfactory, the grade will be accepted and factored into the student's QPA in compliance with the university's grading policies, detailed at http://www.cmu.edu/policies/

Graduate classes are subject to +/- grades, and all grades will be factored into the student's QPA accordingly. The minimum acceptable grade on courses is a B-. If a grade of C+ or lower is earned for a course, the student must retake or replace the course and achieve a B- or better. All students must maintain a QPA of 3.0 or above to remain in good standing in the program. (Some Fellowships may require a higher than 3.0 QPA.)

All courses offered by HCII are graded on the 4.3 Graduate Student Grading Standard described in full at

http://www.cmu.edu/policies/documents/Grades.html.

A Ph.D. student in good standing in the HCI program who has completed all of the required coursework will be eligible to earn a Masters Degree (M.S.) in HCI (which is distinct from the M.H.C.I., which is the professional masters degree given by our HCI Masters Program). Eligible students may request the M.S., in writing, by emailing or submitting a letter to the Ph.D. Program Coordinator, who will review the student's coursework, and submit the request to the Ph.D. Program Director. If the Ph.D. Program Director approves, the Coordinator will certify the M.S.

Dissertation Proposal

The dissertation or thesis proposal is a document that clearly specifies the problem being addressed; the significance of this problem and expected scientific contributions; relevant other research, including competing approaches; the student's preliminary results; the specific work remaining to be done; evaluation metrics; and a projected timeline for completion. The student needs to show that the proposed research is original and interesting, and is likely to succeed. The proposal typically occurs by the spring semester of the student's fourth year. Fulfilling the requirement involves writing and orally presenting a proposal, and obtaining advice and approval from the thesis committee. Students should meet with the committee members at least once to discuss their work before the proposal. Some students choose to go over their proposal talk with multiple committee members ahead of time. Whenever possible, we strongly recommend meeting with the full committee as a whole, to generate early discussion and expose any possible conflicting views early on.

A dissertation committee, formed in consultation with, and approved by, the advisor(s) will judge the acceptability of the proposal (and the final dissertation). Dissertation committees have at least four members including:

- the student's advisor(s),
- a total of at least three HCII faculty members (including the advisor(s)) coming from at least two clearly separable disciplinary specializations relevant to HCI, and
- at least one external member (who may be an expert coming from outside the university, or a non-HCII faculty member coming from inside the university).

Once a student has established a dissertation committee, they must fill out an HCII "Declaration of Committee" form (available from the Ph.D. Program Coordinator) and submit it to the Ph.D. Program Director for signature.

Note also that one purpose of the public thesis proposal is to protect the student, both in guaranteeing that their thesis is interesting to someone in addition to their advisor, and that if they successfully complete the work described in the

proposal, they will indeed be finished. During the final thesis oral defense, the student will *not* be required to show that he or she has done everything that was proposed. It is quite common for the resulting dissertation to differ somewhat from the work originally proposed, as approved by the committee. In this sense, the proposal is an opportunity to present the student's best current ideas about the thesis research, and obtain some useful early feedback from experts in the research area. The proposal need not have answers to every question it raises, but it should bring up a good list of questions that will drive the research.

A list of the specific dissertation proposal procedures can be found in the Companion Guide.

Final Dissertation and Oral Defense

The Dissertation must describe a significant piece of original research work. It provides evidence of proficiency, high attainment, and ability to do independent research in HCI. The written dissertation document should include a detailed description of the work done, including a clear evaluation and a discussion of its scientific contributions. There are no fixed style or document length guidelines, or other formatting requirements, except that the title page should be suitable to be issued as an HCII Technical Report, and the document should be recognizable as typical of high quality written communication in the area.

The dissertation oral defense is a public presentation and defense of the dissertation results. The dissertation work, document, and defense will be assessed and approved by the dissertation committee.

A list of the specific final dissertation and graduation procedures can be found in the Companion Guide.

ADDITIONAL REQUIREMENTS

Orientation

The HCI Ph.D. program provides a week-long orientation for all new students in the week prior to the beginning of fall classes. Although not a degree requirement per se, all incoming HCI Ph.D. students are very strongly encouraged to attend this orientation.

Carnegie Mellon University offers a (several day long) orientation for all new graduate students, held two weeks before fall classes begin. Certain parts of the university-wide Graduate Student Orientation are specifically geared towards international students and international students are required by the Office of International Education (OIE) to attend this orientation.

Teaching

Students must successfully complete two Teaching Assistantships (TAships). Successful completion is determined by the faculty member for whom the student serves as TA. The faculty member in charge of TA assignments will collaborate with the HCII Ph.D. Ombudsman to gather information regarding TA preferences among the students and faculty, and will submit recommendations to the Ph.D. Program Director for approval. This process attempts to be responsive to the department's needs, student preferences, and faculty requests.

When deemed appropriate and approved by the Ph.D. Program Director in advance, a student can substitute a TAship with teaching or co-teaching a course. In these cases, a student may wish to receive FCEs (Faculty Course Evaluations) from the students taking their course. In order to do this, the Ph.D. student teaching the course must submit the university's "Consent to Release Student Information for University Course Assessment" form. This can be obtained from and returned to the Ph.D. Program Coordinator or the student can find it on the Enrollment Services website (www.cmu.edu/hub).

When serving as a TA, a student will be registered for 05982, Independent Teaching Experience. The faculty member of record for the course being TA'ed will assign a grade to the student. Students should confirm the expectations for the TAship with the faculty supervisor, to understand what they need to do to get a good grade. A grade is assigned to the TAship to make it clear that the faculty as a whole takes teaching seriously and that the student should take their teaching responsibilities seriously as well.

Language Proficiency, in Order to TA or Teach

If English was not the student's native-born mother-tongue, then as a nonnative English speaker, the student is *required* to take the International Teaching Assistant Test (regardless of citizenship or where the student received his/her previous degrees). This is required by Carnegie Mellon policy and Pennsylvania state law and must happen before a student can work as a teaching assistant. This test evaluates whether a student has the robust academic fluency to communicate effectively in the U.S. classroom. More information can be found on the Intercultural Communication Center's (ICC) website (http://www.cmu.edu/icc/).

Communication Requirement

In each of their first two years, students are expected to give an oral presentation of their work to the Institute. One of these presentations must be approved by the faculty as meeting the oral communication requirement. Presentations are normally done at the end of each academic year (during August's Ph.D.

Orientation, the week prior to the start of Fall semester classes), but may be scheduled at other times in special circumstances. This sometimes happens, for example, when a student has a personal emergency or is still away on a summer internship past the presentation date. The faculty meets after the talks and decides whether or not the student's presentation qualifies to meet the requirement ("passes"), after which the student's advisor(s) discusses this decision with the student. The merit of the talk is considered both in terms of the quality of its presentation and the research content of the work presented. The presentation content should be appropriate for our multidisciplinary institute. The standards for this requirement are very high, and speaking well takes practice. A student may not satisfy this requirement on the first attempt, and no stigma is attached to those who do not. If a student receives an "early pass", he/she is still required to do a second presentation the following year, and that requirement should be taken as seriously as the initial attempt. In the unusual event that a student does not pass either one of their two talks, the student will have the opportunity to give additional presentations in subsequent years until they pass.

Usability Skills Requirement

The intent of this requirement is for the student to demonstrate that they possess basic usability skills (which would, for example, enable the student to teach an Introductory HCI course). Opportunities to pass the usability requirement are:

- TA for the User-Centered Research and Evaluation course (05410/05610)
- Take (and receive at least a B- in) the User-Centered Research and Evaluation course (05610)
- Pass the knowledge and skills portions of the User-Centered Research and Evaluation course; in other words, "test out" of the requirement

Students may make one attempt to test out (the 3rd option above). If a student is unsuccessful, they will need to fulfill the usability skills requirement using one of the other options above. In order to test out of the requirement, students will need to pass *both* the skills and knowledge components of the class. Exactly how to do this will depend on the details of the class and the instructor each year. If a student is considering trying to pass out of this requirement, this student must inform the instructor by August 1st. The student may be required to take exams or turn in homework in sync with other students in the class.

External Funding Application Requirement

We believe that graduate funding is a collaborative effort between students and the University. Because the mentored experience of writing grant and fellowship applications as a graduate student is of value to the student, advisors, and the department, and the receipt of external awards constitutes a significant advantage on the job market, doctoral students are required to apply for external

funding no later than the fourth year of their PhD program. There is *no requirement* on the amount of the external funding requested or that the proposal results in a successful award. Opportunities for these will be sent to the HCII PhD email list, so students should look for these and consider other opportunities they hear about.

Examples of national fellowships are NSF, NDSEG, NPSC, EAPSI, SMART. Students should check their eligibility for these fellowships and apply if appropriate, starting in their first year. (NSF fellowship applications are due in November, and only first and second year students are eligible – often students need to apply twice before receiving one.) Examples of companies offering industry fellowships are Intel, Microsoft, Siebel, Google. There are also foundations which offer fellowships, such as Hertz, Ford, Javitz, Spencer. Receiving a fellowship may also entitle the student to a small extra stipend. A partial list of possible fellowships can be found at:

http://www.cs.cmu.edu/~gradfellowships/fellowships.htmlhttp://www.cmu.edu/frac
http://www.nsf.gov/grfp

Community and Citizenship

Our sense of community is well-known as a distinguishing aspect of the HCI Institute and the School of Computer Science at Carnegie Mellon. It is one of the reasons many students choose to come here. The Institute is proud of our strong community spirit, which we foster through close working relationships between students and advisors, among faculty, and among students. Many working relationships turn into friendships for life.

Our community works. People volunteer their time, energy, intellect, talent, and other skills to do many of the things that keep our environment running smoothly. These efforts include organizing academic activities, serving on departmental committees, planning and running social activities, giving tours, hosting visitors, and a number of other tasks. Students are expected as a normal course of their studies to contribute to this community in appropriate ways. Some of the many ways to contribute include:

Attending Seminars

The Human-Computer Interaction Institute sponsors seminars by leading researchers from within and outside Carnegie Mellon, which are attended by faculty, staff and graduate students. While not strictly a requirement, students are strongly encouraged to attend these talks, and meet and interact with visiting scholars. This is extremely important, both to get a sense of the academic projects that are pursued outside of Carnegie Mellon and to get to know the leaders of such projects. That applies not only to seminars directly relevant to a student's research interests; the seminars provide an opportunity to widen one's perspective on the field. There are also a wide variety of relevant and interesting seminars outside the HCII (in other departments in SCS and elsewhere in the university) that students should consider attending.

Mentoring and Assistance

There will be many opportunities for students to play a mentorship/assistance role to both students in their year or below, and even above their year, as well as faculty and staff. This occurs in classes through asking questions and contributing to group discussions. It occurs from having some particular expertise that others can leverage (e.g., visual design), or general expertise in HCI (being able to comment on a practice talk, reading a colleague’s paper) that can be leveraged. Students should make themselves available for opportunities such as these and provide assistance wherever possible. Just as students come to other students for assistance, students should also call on faculty, to best leverage the incredible resources we have in the HCII. This of course works both ways: not only should students provide assistance when requested, but if a student identifies a piece of research or paper that could be of use to another member of the department, he/she should pass it on to that person. In order to do so, students should be roughly familiar with the research interests and goals of other students and faculty in the department.

In addition to academic support, students and faculty should also be available for moral support. We expect the very best of our students and faculty, and, at times, this can be overwhelming and stressful. Being able to listen to others about issues they have is an important part of providing mentorship and assistance.

Volunteering

Occasionally, there are times when the department/school/university requests your assistance with activities. Students are asked to volunteer/step up to take on these volunteer tasks, when they are able to. In particular, we rely on our students to help us organize an exciting, attractive, and successful recruiting program for incoming doctoral students. You remember best what worked to attract you, and you are our best advertisement for the department – we will be looking to you to take leadership positions in the organization and implementation of the doctoral student visits.

Similarly, if students identify an issue with courses, the program, the department, etc., they should notify the appropriate person to appropriately address it. Being a good citizen definitely includes looking for ways to improve it, providing constructive criticism, and, in general, keeping it healthy.

Summary and Checklist for Typical Expectations

Graduation requirements for this program are met through a combination of efforts in three major areas: research, coursework, and teaching, further described in the previous pages. Here is a list of the expectations of the program (not intended to be absolutely comprehensive), along with a general timeline.

TYPICAL STEPS
During first year or early
Advisor selected; Ph.D. Program Director & Coordinator informed via email
Discuss outside funding with advisor, apply as appropriate
Take 05-771 Process and Theory in HCI course
Take first two required mini courses
Take first two additional course towards 4:1:1 course requirements
Submit initial Plan of Study
Perform research (each year!) and be prepared to present it at the end of the summer
Oral Communications requirement #1 (must pass at least one)
ICC testing, if English was not first language
Inform Advisor, Ph.D. Coordinator, & HCII business manager re: Summer plans (each year!)
Within First two years
Plan of study has been approved
Take third & fourth required minis
Complete most required courses
Plan for completing usability requirement
Oral Communications requirement #2
Typically third year
TA #1
Completed 4:1:1 course requirements
Completed all required courses (including studio course)
Identified research area
One or more “substantive” publications
Typically post-third year
Choose committee members & have approved by PhD Program Director
TA #2
Usability skills requirement completed by now
Propose (often spring of fourth year, depending on area, etc.)
Sign and submit ABD form to Program Coordinator
Apply for external funding (grants/fellowships) by now
The final stretch!
Finish oral and written dissertation (including required forms)

In addition to the above requirements, students are expected to:

- Keep their contact information (addresses and phone numbers) up-to-date with the Ph.D. Program Coordinator, the HR Coordinator, and the Student Information System ("S3", via the HUB website, www.cmu.edu/hub). This is important for several reasons, including the prompt delivery of tax information from CMU Payroll and in the event of an emergency.

- Report any awards, fellowship, or other funding to the HCII Business Manager and to the Ph.D. Program Coordinator as soon as the information becomes available. While graduate students are not required to take an external fellowship, SCS policy requires graduate students to disclose all external fellowships they are awarded.

- Notify the Ph.D. Program Coordinator about any internship or other reason for an extended absence.

- Discuss with the Ph.D. Program Director and Coordinator before engaging in any consulting (more on that later in this document).

- Talk with the Ph.D. Program Director and Coordinator about any plans for changing advisors, or even about the possibility of changing advisors.

- Meet with your Advisor(s) on a regular basis, as well as your other Committee members later on.

- Actively pursue research ideas and submit publications.

ADVISING and EVALUATIONS

The HCII Ph.D. program has a director, and graduate students should feel comfortable in meeting with the director to discuss their curriculum, research or career. This person serves in addition to the students' faculty research advisor(s). The HCII faculty holds a Student Evaluation at the end of each regular semester (Fall and Spring), typically around the time that final course grades are due (e.g., December, May). The entire HCII faculty meets and discusses the academic progress of each student.

The primary purpose of the Evaluation Meeting is to help guide the student and give performance feedback. It also aids the faculty advisor(s) in establishing ways to more positively impact the student's trajectory towards attainment of the degree in a reasonable period of time. In order to communicate to the faculty what the student has accomplished and experienced during the semester, the

student is required to submit several items to the Ph.D. Program Coordinator, via our in-house gsaudit system, prior to each evaluation. Among these are:

- A Student Statement including current semester accomplishments, plans for future work, and other details,
- A proposed Plan of Study (or later a revised Plan of Study if changes are made to a previously approved plan),
- Current CV or resume, including all publications and presentations

Each student should discuss these materials, along with specific plans for upcoming work with their advisor(s) *prior* to the evaluation meeting. The student's advisor is expected to be the student's advocate in this process – this is one of many reasons why it is very important that your advisor knows what you are doing, and has a positive opinion of it.

For each student, an evaluation letter is written and given to the student as hard copy, as well as being accessible in the gsaudit system. The letter indicates whether or not the student is making "satisfactory progress" towards completing their degree based on their coursework, proficiencies, and research progress. The advisor is expected to convey more detailed feedback about the conclusions of the evaluation to the student.

There are normally three overall outcomes from the evaluation: "satisfactory progress", "concern" and "N-1" (or probation). A *good* letter typically simply indicates that the student is making "satisfactory progress" (these words will appear in the first few sentences). If the student is doing exceptionally good work, a stronger adjective such as "excellent" might be used, however, this is unusual.

Students who are seen as struggling or headed in a troubling direction, but remaining in good standing may receive a letter indicating concern (in that case the word "concern" will appear in the first few sentences along with "satisfactory progress"). Concern letters normally provide additional advice and steps to be undertaken. They may also place additional specific requirements on the student to remain in good standing. Students should carefully discuss any concerns with their advisor(s), and in some cases with the program director. They should plan steps to alleviate the concerns so that they may remain in good standing in the program.

Students who are evaluated by the faculty as no longer making satisfactory progress in the program will be placed on a probationary status ("N-1 status"). These students are not considered to be in good standing and will receive a letter (referred to as an "N-1 letter") establishing a clear set of steps that the student needs to undertake in the next semester in order to return to good standing. An N-1 letter should be considered a wake-up call and a warning, and as such should be taken seriously. However, it is **not** a permanent "black mark" on the

student's record; if the student begins making satisfactory progress again, there is no official record of the letter in the student's transcript.

We would further emphasize that the faculty very much wants our students to succeed – graduated Ph.D. students are one of our most important accomplishments. In addition, even at the time of admission, each student already represents a significant investment in faculty time and energy, due to the admissions and recruitment process. As time goes on, each student also represents a large investment of research funding. Thus it is in the faculty's interest that the students succeed. We do however have a duty to maintain the program's standards.

Students who do not clearly meet all the expectations set out in an N-1 letter may be terminated from the program (and correspondingly lose financial support). Based on this mechanism, it normally takes at least a semester after receiving the N-1 letter to be removed from the program for poor performance. (In very unusual cases, e.g., severe ethical violations, a student may be removed from the program immediately.)

ADDITIONAL POLICIES

Policy Context: SCS & University Policies Apply

This document is intended to be used in conjunction with the Carnegie Mellon Graduate Student Guidebook which may be referred to for university policies, regulations and community standards. All HCII policies not explicitly described in this document conform to School of Computer Science (SCS), and/or university policies as defined at the official University Policies website (including policies on cheating and graduate academic disciplinary actions) and/or in the Graduate Student Guidebook.

Grandfather Policy and Time Limit

A student can graduate under the requirements and policies in effect at the time they entered the program or choose to change to the requirements of new curricula adopted at a later point.

After the presentation of an acceptable thesis proposal, and satisfying all other requirements except for the dissertation and its oral defense, students are regarded as “all but dissertation” (ABD). Students reaching ABD status should work with the program coordinator to ensure that relevant University paperwork is completed at that time. Once students achieve ABD status, their doctoral candidacy continues for a maximum of seven full academic years, unless terminated earlier by conferral of the degree or by academic or administrative action.

Application Timing and Transfers

All new students to the program must begin in the fall semester. Consequently, applications for admission are only considered once a year – in the early spring semester. Historically, admission to the program has been extremely competitive, with many good students turned away each year due to resource limitations.

Students from other universities seeking to transfer into to the HCII Ph.D. program should simply apply to the program in the normal manner. Like other applicants with varying levels of prior education (i.e., applicants applying with a Masters degree vs. directly from undergraduate work), students with some prior work towards a Ph.D. will be judged based on their record in comparison to their level of education and time of study.

Students wishing to transfer into the HCII Ph.D. program from another Ph.D. program in the School of Computer Science should also submit materials at the time of regular admissions. However, SCS transfer students may request that the admissions materials used for their original admission in their current department be reused, if that is appropriate. All SCS transfer applications will be considered by the admissions committee in the context of regular admissions. Transfers will only be granted for students who are evaluated as being comparable to the other students admitted that year. All successful transfer students will begin their work in the HCII program the next fall (i.e., with the next entering class).

Financial Support

The Institute endeavors to provide financial support for all students in the program so long as they remain in good standing. Financial support is not tied to a particular advisor and support for students in good standing will be provided when students change advisors or are between advisors for limited periods. However, in nearly all cases funds for student support are provided from the research projects they work on (including the advisor(s) research grants), and they are expected to contribute to those research projects appropriately. Also, because of the central educational role of the advisor, students cannot remain in good standing indefinitely without an advisor.

We encourage students to seek their own external funding since often the award is prestigious (e.g., NSF or Hertz) or the source provides an opportunity to make professional connections (e.g., an industrial fellowship). The Institute (typically the advisor) supplements the stipends of students with an outside fellowship to meet (and usually exceed) the stipends of students with internal funding. The Institute also provides a supplemental dependent allowance for any student whose spouse or qualifying domestic partner earns less than $200 per month.

Internships and Outside Employment or Consulting

The Institute encourages students to gain experience in industry through research internships – most typically in the summer months during one or two years of their study. All internships need to serve an educational purpose and be approved in advance by the student's advisor(s). All students on internship must register for at least 3 units of 05888 Practicum in HCI to represent this educational component and, at the conclusion of that course, complete a very brief report describing internship activities and indicating educational relevance. Students are limited to four instances of practicum unless special permission is granted by the Ph.D. Program Director. Note that nothing in this requirement should be interpreted as requiring disclosure of any intellectual property or other matters sensitive to the host of the internship. Internships outside the summer require that special arrangements be made in advance with the program coordinator. In non-summer months it may be necessary for the advisor to pay some amount of tuition for a student to maintain their status. However, the Institute does not normally pay the student a stipend while they are on paid internship. In addition, students who are on internship the semester before they have agreed to TA a course, should discuss their return date with the course instructor, and should return before the next semester begins.

Outside of internships and leaves of absence (see below), students are normally expected to be in residence full time and work full time on their research and other program activities. In these circumstances, outside employment or consulting work can only be undertaken with the permission of the advisor and the program director. Requests to allow outside work will normally be granted only in cases where the work serves a specific educational purpose. Students may also be required to limit approved outside employment in order to be in compliance with university and government rules.

Leaves of Absence

Students who wish to leave the program temporarily (outside of research internships) may request a leave of absence by submitting a request to the Ph.D. program director. If granted, leaves are initially extended for a period of no more than one year. However, an extension of up to one additional year may be granted under exceptional circumstances. When an extension is granted, the conditions for return must be negotiated with the advisor and approved by the program director prior to returning to the program. Students on leave of absence should contact the Ph.D. program director two months prior to the end of the leave to indicate their plans for the next year. Further extensions of leave will not be granted. Normally, a student must be in good standing in order to be granted a leave of absence.

Students on leave of absence must contact the program coordinator two months prior to the end of the leave to indicate their plans. While a leave can in principle

start at any time, university regulations allow students to return only at the beginning of a semester (usually late August or January).

Human Subjects

Any study that involves people requires approval **in advance** by the university-wide “Institutional Review Board” (“IRB approval”). This is very, very important and it is necessary in order to be in compliance with federal law (as well as ethical guidelines). Discussion of the details of IRB applications and the requirements for ethical human subjects research will be considered in the introductory HCI Process and Theory course (normally taken in a student's first semester). All human subjects work should be discussed with, and approved by, your advisor(s) or another faculty supervisor.

Intellectual Property Policy

The HCII adheres to the University’s Intellectual Property Policy: http://www.cmu.edu/policies/documents/IntellProp.html

Student Concerns & Grievances

The HCI Institute prides itself on its sense of community, and historically our community culture has been one of welcoming feedback and actively responding to it. Students are encouraged to raise any concerns early by speaking with their advisor(s) and/or the program director. In addition, there are University-level policies and mechanisms for addressing concerns, appeals and grievances.