

PROCEDURES FOR THE HCI PROJECT:

For the

Master of Science in Human-Computer Interaction

HCI GRADUATE PROGRAM

Indiana University School of Informatics

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(IUPUI)

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I. GETTING STARTED

This document is an instrument for ensuring clarity, consistent standards, high-quality and timely completion of your project. Responsibility for understanding all aspects of the project process, including due dates, deliverables, and obtaining signoff signatures, resides solely with the student.

Difference between a Graduate Project and Graduate Thesis

- **Graduate Project:** Graduate research leading to a Master of Science HCI Project is a professional enterprise in applied research, the primary purpose of which is the advancement of best practice and applied knowledge within the discipline of human-computer interaction (HCI).
 - Applied research is designed to solve practical problems of the modern world, rather than to acquire new knowledge. Applied research can be exploratory, but often is descriptive.
 - Students interested in executing a project must design and implement a system that embodies a novel innovation that constitutes a contribution to HCI and demonstrate that the innovation really constitutes an improvement. For example, applied researchers may investigate ways to innovate database design for online e-commerce, or arrive at a solution of a particular interaction design problem with international Web sites, or improve the usability of a feature of a particular software program.
 - The focus of an HCI master's project is not basic research per se, but an original contribution to the applied aspects of the HCI discipline. Graduate students should carefully consider how they might make such a contribution to form the basis of a final project proposal.
 - Projects are NOT activities that surround the mere making and testing of existing or newly created interactive products. Rather, students must focus on the innovation of newly developed methods, tools, or interactive products that embody the application of HCI-centered principles and practices.
- **Graduate Thesis:** Graduate research leading to a written Master of Science HCI Thesis is a scholarly exercise, the primary purpose of which is the advancement of theoretical knowledge within the discipline of HCI.
 - The focus of an HCI master's thesis is NOT a project, but an original contribution to the discipline of HCI. Graduate students should carefully consider how they might make such a contribution to form the basis of a thesis proposal. (For further details, students should read the document, Procedures for the HCI Thesis.)
 - What distinguishes the Masters thesis and the Ph.D. dissertation is that the doctoral dissertation must be "highly original" and produce a "substantial contribution" to the discipline of study. In the case of doctoral research, the student is posed with greater challenges and a much higher level of rigor.
 - Graduate students that are seriously considering obtaining a Ph.D. should consider writing a thesis, rather than doing a project.

Research Project Course

- The Final Graduate Project is a two semester (6 credit hours) culminating activity for the Master of Science degree in Human-Computer Interaction. The course is called: I694 Thesis/Project. See Appendix E for the two year plan of study.
- The final project course will produce deliverables that include a: project proposal with accompanying presentation, professional paper prepared for peer review for a journal or conference, working prototype, usability/evaluation study, supporting documents, poster, Web site, final presentation, and CD archive.

Project Advisors and Other Faculty Support

- The graduate student must select a Primary Advisor (PA) to supervise his/her final project by the end of the first semester of study. Each student will indicate his/her preference for a PA. First, second, and third choices for your PA are requested. (In some cases, the PA may be other faculty from within the School of Informatics at IUPUI or IUB.) These are submitted to the Program Director (PD). The PD will make the final selection, balancing students among the HCI core faculty. Changing your PA during the year is not encouraged. But, if a change is required, the request must be approved by the PD.
- The PA is the faculty person who works most closely with the student throughout the two semester project process. This person will meet with you on a regular basis and establish intermediate timelines and deliverables.
- The PA is also the person who runs I694 (Thesis/Project in Human Computer Interaction) and with whom you will meet in a weekly project class where special topics will be presented and students will share their progress and deliverables. The thesis advisor usually also acts as chairperson of the student's project committee. The PA will give direction to the student's work and usually acts as the chair of the final project committee, i.e., takes "responsibility" to setup meetings or any other forms of communication necessary to discuss the progress of the student's research.
- Also, a final project topic is determined by the student, in consultation with his/her HCI PA and the Graduate Program Committee, and these may not be changed by the student or the PA without written authorization from the Program Director and the Associate Dean for Graduate Studies and Research. The PA must be an HCI core faculty member. Current core faculty include Professors Faiola, MacDorman, and Bolchini.

Final Project Committee

- When appropriate, we encourage students to work with faculty outside of the HCI core, who are from Media Arts and Science and Health Informatics. (Please see the list above.) We also encourage students to consider faculty from outside the school as members of their project committee.
- The other project committee members will work with the chairperson to oversee the completion of the student's research project. Committee members must be accessible to the student in order to provide direction throughout the process. Upon agreeing to sit on the student's committee, all committee members must sign the cover sheet of the proposal or send an email confirming agreement. See Appendix A.

The HCI PD and Associate Dean for Graduate Studies and Research (AD)

The PD will sign off on your final deliverables. The PD is Dr. Anthony Faiola. The PD, with support from his administrative team, will certify submission of all deliverables and proper signoff at the end of the project life-cycle. The AD will sign off on fulfilling all requirements for graduation and authorize the awarding of your master's degree. Dr. Palakal is the AD.

II. PROJECT DEVELOPMENT

Management

Successful completion of your project requires planning and steady execution of your plan. You need to manage yourself and others. You must manage project expectations. And you must communicate clearly and frequently with your PA. If your PA needs to write a note to you about a deliverable, then that should be a "red flag" to you that you may not be in control of your own process.

Selecting a Final Project Topic

- In consultation with the PA, the graduate student must decide on an action plan suitable for graduate

research. This will include the project topic and a detailed timeline for each phrase of the work up to the date of submitting all deliverables to the PA, PD, and AD.

- A project topic should be decided during the second semester in the program. Of course, modifications of the topic may occur up to the beginning of the third semester in the program. It is imperative, however, that full-time students begin their final project immediately upon entering their third semester in the program. Because part-time students are under a different schedule for graduation, they begin at a later time. Once the topic is agreed upon by the PA and PD, an email must be sent to each party confirming the decision.
- The selection of a project topic will occur through the following process:
 1. Each student, upon entering the HCI program, will receive a list of research topics if he or she so desires. This list was developed by the HCI faculty. The topics will consist of areas of research familiar to the HCI faculty. Other topic areas that have the potential to provide the student a novel area of research will be provided if requested. Students are encouraged to read the published papers by the core HCI faculty to understand their respective research areas.
 2. Students may formulate their own research topic under the direction of their PA. However, students are advised that their area of research must comply with the standards set by the HCI faculty regarding what constitutes an applied research project.
 3. Within the first two weeks of the third semester, all students will submit their research topic by preparing and submitting to their PA the completed Project Proposal: (See the Appendix A below.)

Preparing the Project Proposal

- Each student must complete their research project proposal through the end of the methodology section. Students must give considerable thought to what exactly they want to do. Their writing style must be concise. This will not be the time for too many details, as in the expanded paper, but it must clarify exactly what the student is interested to doing. See Appendix B below.
- The project proposal, when completed, will serve as a framework for the first three sections of the student's paper. As the project develops, there will inevitably be modifications, but the primary structure of the paper (up to the methods section) will be complete. The process of writing the project proposal may take numerous iterations to receive approval by the PA. Once the document is approved by the PA, it will be sent to the project committee for their response.
- Examples of HCI graduate projects from the IUB campus can be found at:
 - <http://www.informatics.indiana.edu/hcid/capstone/>
 - <http://www.informatics.indiana.edu/hcid/research/>

Deliverables

The following is a list of deliverables for which you are responsible and the people who must sign off on these deliverables. A signoff indicates completion and acceptance of the deliverable. (We will use paper or email signoffs to be kept with your file by the PA.)

1. Project Proposal. Your proposal is an outline of your research and development plan. It must include:
 - a. Student name,
 - b. Student primary adviser(s)' name(s),
 - c. A working title for your project,
 - d. A target interest group,
 - e. A brief description of the "problem space" and why it's important (e.g., potential impact - social, economic, educational, entertainment, etc.),
 - f. References, and

- g. A preliminary plan including timeline for literature review, observations (user studies), insights, concepts, prototype, usability studies, business or economic strategies, and all deliverables listed below.

NOTE: Normal expectation is that your proposal be completed by (preliminary due date – last week in September). Signoff: PA and PD.

2. Protection of Human Subjects. See the Protection of Human Subjects Web site: <http://research.indiana.edu/rschcomp/hmpg.html> before beginning your project. You must show evidence that you passed the compliance test for IU; this must be done by October 1. NOTE: Before you begin your research, you must receive approval from the IUPUI Human Subjects Committee (HSC). You must provide documentation.
3. Project Design Proposal and Presentation. You have to prepare a project design proposal and make a presentation of your project. This is a more elaborated and focused version of your Project Proposal. The Project Design Proposal Presentation is your way of presenting and “selling” your project and idea to a client, decision maker, user group, or who ever might be interested in your project. You will present this to the class. These presentations will take place in November. Signoff: PA and PD.
4. Paper. You must produce a professional, written paper, equal in quality to a full length paper submitted to a refereed journal or conference. In cooperation with your adviser(s), select an appropriate venue for your paper and follow the guidelines for that organization. Include these guidelines with your paper deliverable. In most cases you will submit your paper for publication and you should show evidence of this. Signoff: PA and PD.
5. Prototype. You must design and develop a working prototype suitable for demonstration purposes and usability/evaluation studies appropriate for your project and purpose. Signoff: PA and PD.
6. Usability/Evaluation Studies. Documentation of this should be included in the paper. Signoff: PA and PD.
7. Supporting Documents. Supporting documents include all sketches, notes, observations, datasets, analyses, etc. These may be original artifacts, scanned artifacts, or a combination thereof. Signoff: PA and PD.
8. Poster. Your poster is a graphically attractive “one page” overview of your project suitable for display in the School of Informatics or at a professional conference. Signoff: PA and PD.
9. Web Site. This is similar to your poster, but suitable as a Web site connected to the School of Informatics HCI site. Unlike your poster, it will have links to your paper and other artifacts. Signoff: PA and PD.
10. Presentation. Each project requires a 20-minute public presentation to faculty and students with 10 minutes of Q&A. These presentations will occur on Fridays of these months: April, May, and August. Signoff: PA and PD.
11. Miscellaneous. A 500 word (or less) abstract of your project, a resume, a 500 word (or less) biographical sketch, and a final approval sheet for final signatures: Signoff: PA, PD, AD.
12. CD Archive. All materials above (other than supporting documents) should be archived on a CD and submitted to Mary O’Neill in the Office of the Deans, School of Informatics, IUPUI.

One, Two or Three-Person Projects

- Projects are generally a single person enterprise. If the PA joins in the submission of the paper to a journal or conference, the student will be the first author of the final paper,. Additional authors are at the discretion of the PA and the student. In rare situations, a case may be made to change the order of authors; if such a case is to be made, the PD must approve and sign off on this change.
- Two or three students may wish to propose two or three closely related research areas, where one research domain complements the other. In this case, the PA should be the same for both students. While it may seem more complicated to execute and coordinate two related projects than unrelated projects, the advantage is that one person can motivate and stimulate the other. Moreover, the skill-

sets of the two or three students may also complement each other; and therefore produce a stronger product.

Summer

Faculty may or may not be officially working during the summer months. If faculty are in their offices, they are probably working on their own research or catching up on their other obligations. You should not expect faculty to be available to you during the summer. Before making any assumptions, ask your PA. This is your responsibility.

Problems

Always try to work out issues with your PA first. But if a problem develops that cannot be resolved, you should contact the PD. If the “next level up” is the same person, you should make an appointment with the AD.

III. PROJECT COURSES – I694 (PARTS ONE AND TWO)

- Goals: The Final Project is a two semester culminating activity for your MS in HCI. The project courses will provide you with opportunities for learning and development in relation to your project. The goal of the courses is to support the project process and make sure that you will finalize your project on time and with good quality.
- Attendance is mandatory for all students!
- Structure: The courses will be structured around activities and themes that are of major importance when planning, developing and working with a larger project. The courses will be divided into themes that we will work on for a few weeks. Each theme will address some specific aspect of design and research practice. Most of the class work will be done through discussions, sometime in the whole class and sometimes in smaller groups. Experience has shown that active participation in these discussions are crucial to your project success!
- Topics: We will explore and examine the differences between doing research and design. We will explore how those differences manifest themselves in the practical thinking and planning of your projects, how they can be transformed into choices of method, techniques and perspectives. We will also explore, examine and practice the art of creating and managing an HCI portfolio and resume. Specific topics covered include:
 - General topics covered:
 1. The creativity, ideation and framing of a project
 2. Finding inspiration and relevant research and literature
 3. Planning a project, project management
 4. Presenting and selling a project
 5. Dealing with teams and real life situations in design projects
 - We will focus on the thoughts and skills that goes into:
 1. Practical issues in design and research processes
 2. Ethical issues and responsibilities
 3. How to abstract and generalize from empirical studies and experiments
 4. How to transform designs into “real” products and processes
 5. How to write research papers and design papers
 6. How to prepare a presentation and a poster
 - We will also continue to explore and discuss:
 1. Job searching
 2. Interviewing for jobs
 3. How to present a CV and a HCI portfolio

Course Project One (3 Cr.)

- The purpose of Project One is to begin the project work. At the initiation of Project One, students will meet with their PA to agree upon a timeline to complete their research and paper.
- The student will be responsible for completing each stage according to this timeline. Failure to complete all the required portions of the thesis on time and according to a standard deemed appropriate for an HCI project will result in a reduce final grade.
- Finally, by the completion of Project One, the student must receive approval from the Institutional Review Boards (IRB) to be sure they are in compliance with federal regulations related to the use of human subjects. To receive approval by the end of Project One, students must submit their application to the IRB office as early in the semester as possible, i.e., no later than October 1. No study using human subjects can be performed until this approval arrives in paper form from the IRB office. The process of approval can take from 2 to 6 weeks, depending on the level of research (exempt or expedite) and the number of changes the IRB review board expects. Please see Appendix D for more details.

Course Project Two (3 Cr.)

- Upon completion of Project One, students will be allowed to register for Project Two. The same process of overseeing and assessing their progress step-by-step will take place.
- The primary purpose of Project Two will be to conduct the proposed research and complete the project, including the paper. The final paper should consist of no more than 5 to 8,000 words, not including the front materials, table of contents, abstract, references, and appendices.
- If students feel a need to produce a rather short or lengthy paper, they should remain in consultation with their committee members as to the reason. In other words, students should not work to extend their paper merely to produce bulk, neither should their paper lack the necessary detail to clearly articulate the purpose of their research and the extent of their findings.
- In sum, the process may take the form of many types of activities, including user testing, field work, prototype design and testing, data collection, and data analysis; and the completion of the paper. This process will demand that the student stay in close communication with his or her thesis advisor because of the complexity of issues that may arise.

Intent to Graduate

The graduate student must file an "Intent to Graduate" form with the Recorder of the School of Informatics at least six months prior to graduation. In each step of completing the thesis, the student should remain in contact with the AD of the HCI Program and their PA to assure that all steps toward graduation are being taken in a timely fashion.

IV. THE PROBLEM SPACE AND THE RESEARCH QUESTION(S)

Overview

- The first stage of graduate research, leading to project completion, is to determine the specific topic on which you will focus. From this point, the statement of purpose should set out the central direction for the work. Next, one or more clear and concise research questions and/or the problem space must be formed. Questions and the problem space provide a specific clarification of the statement of purpose and the HCI problem to be addressed.
- The students' first step is to investigate the conditions and context of product use. Securing the adequate data results in knowledge building of: 1) potential markets and users (local and global communities), and 2) economic, social, and 3) cultural contexts surrounding the identified problem

space. Individual or teams then design a compelling and innovative conceptual model through a methodology that directs team members to reflect on the existing problem solution. Core to the learning process, students integrate and apply theory and design knowledge across the HCI knowledge domains obtained from past and current semesters, right up to the final stages of the project.

Problem Space

- In the final project, it is imperative that a good understanding of the problem space be identified, specifying what it is to done, why, and how it will support users in the way intended. The problem must be explicitly stated and should not be too broad.
- The challenge with solving an HCI-centered problem is that critical usability goals and user needs are often overlooked. For this reason, the interaction design is best done after we understand the nature of the problem space. To understand the problem space students must clarify usability and user experience goals; and clearly layout all explicit and implicit assumptions and claims. The framework for doing this should include: 1) logically reasoning through your assumptions about why something might be a good or novel idea, from which the reader can see the strengths and weaknesses of the proposed project design.
- A fundamental aspect of HCI design is to develop a conceptual model. Hence, following the defining of the problem space, a conceptual model must be constructed that describes the proposed system in terms of a set of integrated concepts specifically related to what the product should do, how it should behave, and what it should look like. Moreover, how it might be understood by the intended target users as defined by the users' needs and requirements. Once the project design and development is on the way, students must include iterative prototype design and testing. For example, ethnography is a form of exploratory fieldwork that includes: 1) immersive participatory observation, and 2) interpretative methods of analysis that are organized. The method is qualitative, with an emphasis on the informant/user/observer's experience.

Research Question(s)

- The purpose of the research question(s) is to better define the scope of the problem while keeping the researcher on track. The question should be a fully articulated statement, expressed in a plain and easy to understand language. It should also be worded in a way that demonstrates and guides the HCI design thinking and research efforts by the researcher.
- The main question of a research project is how the HCI designer will optimize the process to come to a better design solution. To answer the question, a conceptual model of the problem space must be made. This model describes the declarative knowledge that is used by a designer, the design steps that are taken during the process, and the development of the solution of the design problem.
- Research questions are generally written into qualitative type studies. Research questions consist of a broad question followed by several related sub-questions. For example, studies consisting of ethnographic research would entail observing users interacting with some form of technology while collecting primarily narrative data. Based on the research question, the student should arrive at some *approximation* of scientific truth¹. Ethnographic studies are a valid form of inquiry leading to findings that do not necessarily demand the rigor of inferential or descriptive statistics.

¹ Often times, when quantitative data is collected in a study based on a research question, descriptive statistics are used to arrive at a measurable outcome to support this approximation. Descriptive statistics constitute a set of techniques to summarize, organize, and present quantitative data sets numerically in tables or visually in figures, charts, and graphs. Examples of descriptive statistics include frequencies; percentages; measures of central tendency, such as mean (average), mode (most frequent value), and median (middle value); measures of variability, such as the variance or its square root, the standard deviation, range (maximum and minimum), inter-quartile range, and absolute deviation; and measures of correlation, such as linear correlation or rank correlation.

V. PAPER PREPARATION, PRESENTATION, AND SUBMISSION

Once the project is completed, students must complete their paper. See the Appendices for paper organization and format, including the cover page for project committee signatures.

Paper Editing and Proof Reading

- It is the responsibility of the student to submit a professional, written paper to the committee. Neither the PA nor any committee member is responsible for proof reading or to act as editor for the student. In many cases, graduate students hire professional editors to proof their papers for grammar, syntax, typographical errors, and general clarity and the logical flow of ideas.
- Students may take advantage of the IUPUI Writing Lab Center to assist them in the early stages of the preparation of their thesis. However, students must be advised that the Writing Lab should not be used in lieu of a professional editor. The expense of hiring a professional editor will serve to produce a well written thesis. Students should consider the employment of a professional editor as a normal course expense.
- Students should also be advised that their paper may be rejected based on a lack of professional execution, regardless of the quality and substance of the research. In other words, although the content of the paper may meet a professional standard approved by the committee, if it lacks clarity, logic, and grammatical correctness, it may be rejected and the student risks not meeting the deadlines set for graduation.

Paper Review

The graduate student must submit their paper to the project committee that was selected (once the individuals have agreed to serve on it) for review and approval. Typically, the PA and the members of the committee will make suggestions for revising the paper or the project overall. The PA should walk the student through the outline and written form of the paper to assure that the approach meets academic and professional standards before submitting it to a professional journal or conference.

The Oral Defense of the Project

- As a consummation of the research project, all students must formally present and defend their work. After approval by the project committee, the graduate student sets up a time for their defense in the last semester of their graduate work. The graduate student will make an oral defense of their project to the committee at a public seminar with other interested attendees.
- The seminar will consist of two parts, an open and closed session. The open session give the candidate an opportunity to discuss the research findings with an audience and the committee. General questions may be raised for the candidate to expound more specifically on particular problems, issues, or research related topics.
- Following the open session, the general public will be excused and the committee will have an opportunity to ask more specific and probing questions regarding the student's research. The closed session is necessary for the committee to make any final recommendations, enhancements or changes to the project or paper before (or shortly after) submitting it to a journal or conference; and finally to the office of the AD.

Paper Formatting Guidelines

The paper must adhere to the format outlined by the journal or conference it is being submitted to. Every journal or conference proceedings has specific instructions as to when and how a paper should be submitted. Before a formal submission takes place, students should submit draft copies of their paper to their PA, all in 12 point Times Roman font. All headings and subheads must follow the APA format. All use of citations within the document and references in the Reference section must adhere to the APA

format. Students should contact their advisor if they are unclear about paper formatting.

Final Project Submission

- The student must submit their project and paper to the School of Informatics Associate Dean for Graduate Studies and Research (IUPUI) and one to the graduate student's PA. An additional copy may be desired for the student and/or the HCI Graduate Program Director, but this is optional.
- Finally, a digital version of the project on CD-ROM **must** be submitted to the School of Informatics Office of Graduate Studies for posting online by the School of Informatics.

VI. FAQ

1. Will I be guaranteed the Primary Adviser of my choice? *We will try to accommodate your first choice for your PA. However, it's important for us to distribute students evenly among the HCI core faculty. That limits each person to about four students. This is why we ask you to select a second and third choice for your PA.*
2. How often am I expected to meet with my PA? *You are to establish a regular schedule with your PA. Some advisers will ask you to meet with them on a weekly basis, others on an "as needed" basis or according to some pre-arranged schedule. Your schedule should be a result of a conversation with your adviser.*
3. I'm having trouble coming up with an idea for my project. How can I select a PA without knowing the topic? *Selection of your PA will occur during the first week of the semester. It is not necessary to have a topic selected before you choose your PA. However, it helps to have some idea before you select a PA.*
4. Must I attend the weekly project class? *Yes. This is a required seminar class and you will receive a grade for it (see syllabus). Various topics will be discussed in this class – selecting a topic, writing a paper, developing a prototype, etc. In addition, you will be required to present aspects of your project to the class; these will be critiqued. The goal of the project class is twofold: 1) to move you forward to completion in a timely fashion; and 2) to introduce topics that everyone needs to know and should not have to be repeated by your PA.*
5. Do I need to be proactively arranging with an HCI faculty member to assure that this person will be my PA? *Of course you may talk to any person at any time in the School of Informatics. However, pairing of students and advisers will be decided by the PD. Hopefully your first choice will be accommodated, but if six people want to work with Professor X, then some people may be disappointed. This is why you are asked to specify a second and third choice for your PA. Obviously this is a delicate matter of pairing students and advisers (some advisers may not wish to work with you, for example). Thus, we will try to do this as sensitively as possible. The good news is that every HCI faculty member is a nice person and fully competent to advise students; they would not have been hired otherwise!*
6. During my project process, may I talk to faculty other than my PA or SA? *Of course! All faculty members are open to talking to students. However, it's not the responsibility of faculty to advise you formally or informally if they are not assigned to you. It's a delicate balance. Discussions and advice-giving in a general way, however, will be free-flowing in the project class.*
7. When will PA decisions be made? *During the first week of the project class you will be asked to specify first, second, and third choices for your PA. If you choose someone outside of the HCI core faculty, that person essentially is guaranteed to be your PA, pending approval of the PD.*
8. What happens if I don't finish by the end of the spring semester? *There are a few consequences: 1) You should not expect your advisers to meet with you over the summer; thus, they may not be reviewing your work for signoff. The one exception is that, upon approval from your PA, you may give*

your project presentation during August. 2) You will not graduate during the standard May graduation.

9. *What happens if I fall behind in getting my work done – not in terms of days or a couple weeks, but in terms of months? The faculty will work closely with you to make sure that this doesn't happen. But no one can force you to do your work. The ultimate responsibility is yours. You must be diligent throughout the year so that you do not get in this position. However, if you do, you will need to meet with the PD to determine a plan. In rare situations you may be told that you will not receive your master's degree because you did not complete your project (and other requirements) in a timely fashion. Any project that takes more than 16 months may result in forfeiture of your master's degree. Don't let this happen to you.*
10. *What happens if there are unforeseen problems such as illness, family crises, etc.? It's important to have frequent and honest communications with your PA. If an unforeseen situation arises, discuss it immediately with your PA. Timeline exceptions can be made, but these will be done only under dire situations and with the approval of the PD and AD.*
11. *What happens if I've "done my work," but my adviser is unwilling to sign off on the work? Your work is not complete until the required signatures are obtained. If you feel that someone is unreasonable and you have attempted to resolve the situation with your PA, you may appeal the situation to the PD.*
12. *This looks like a lot of work to do in two semesters. Is it reasonable to expect that I'll be able to complete it in nine months? Yes. It can be done. There's no question that you must work hard and that you can't "slack off." But if you attend the project class each week and meet regularly with your PA, you'll be in good shape. The payoff for completion is great: you may have a publishable paper and you will have a powerful portfolio to present during job interviews. Go for it, and have fun doing it!*

Appendix A

**PROJECT PROPOSAL
FORMAT FOR THE COVER PAGE**

INDIANA UNIVERSITY SCHOOL OF INFORMATICS
Human-Computer Interaction Program

Graduate Project Proposal

Project Title
Project Subtitle

Student Name
Student Email

Date of Proposal Submission: _____

Date of Graduation: _____

SUPERVISORY COMMITTEE APPROVAL

Primary Advisor / Chair Signature Date

Project Committee Member 2 Signature Date

Project Committee Member 3 Signature Date

STUDENT CONFIRMATION

Student Name Signature Date

Delete page

Appendix B

PROJECT PROPOSAL OUTLINE

STUDENT NAME

PRIMARY ADVISOR

PROJECT TITLE & SUBTITLE

ABSTRACT (*Max. 500 words, one paragraph*)

INTRODUCTION

1. Introduction and importance of subject
2. Problem Space / Target users
3. Research Questions(s)

LITERATURE REVIEW

1. Theoretical background
2. Related HCI topics, if any

METHODOLOGY

1. Participants
2. Treatment or Procedures
3. Data Analysis

REFERENCES

TIMELINE

APPENDICES

Appendix C

FORMAT FOR PAPER

TITLE	
SUBTITLE	
AUTHOR(S)	
MONTH AND YEAR OF GRADUATION	
ABSTRACT	ERROR! BOOKMARK NOT DEFINED.
INTRODUCTION	ERROR! BOOKMARK NOT DEFINED.
Introduction to Project	Error! Bookmark not defined.
Importance of Project	Error! Bookmark not defined.
Related Research	Error! Bookmark not defined.
LITERATURE REVIEW	ERROR! BOOKMARK NOT DEFINED.
Introduction (Related research, Current practice or understanding)	Error! Bookmark not defined.
Research Question(s) / Problem Space	Error! Bookmark not defined.
METHODOLOGY	ERROR! BOOKMARK NOT DEFINED.
Participants	Error! Bookmark not defined.
Procedures: Design and Testing	Error! Bookmark not defined.
Analysis	Error! Bookmark not defined.
RESULTS (Findings)	ERROR! BOOKMARK NOT DEFINED.
DISCUSSION	ERROR! BOOKMARK NOT DEFINED.
Explanation of Outcomes	Error! Bookmark not defined.
Implications of Results	Error! Bookmark not defined.
CONCLUSION	ERROR! BOOKMARK NOT DEFINED.
REFERENCES	ERROR! BOOKMARK NOT DEFINED.
APPENDICES	ERROR! BOOKMARK NOT DEFINED.

Appendix D

Institutional Review Boards (IRB) Approval

All research conducted at Indiana University-Purdue University Indianapolis (IUPUI) involving human subjects must be reviewed and approved by its respective campus research IRB risk review board. The boards review research plans and monitor ongoing research to insure full compliance with federal regulations and University policies. Protocol submission and requests for approval of research to each of these boards involve *separate procedures*. Therefore, it is important that the investigator initiate each procedure well in advance of any deadlines to allow adequate time for the review and approval process.

All HCI graduate students must be in IRB compliance by submitting the necessary applications to the IRB Advisory Board with enough time before beginning their research. Please see the IRB site, which has all necessary information and forms: http://www.iupui.edu/~resgrad/spon/rescom_human_menu.htm

See the Thesis/Project page for examples of IRB applications:
<http://informatics.iupui.edu/academics/hci/thesis/>

Appendix E

MASTER OF SCIENCE IN HCI Course Schedule & Plan of Study

FULL-TIME STUDENT - PLAN OF STUDY ³						
Semester	Year 1			Year 2		
FALL	Informatics Research Design (I575) ²	M - MacDorman	Introduction to Informatics (I501)	T - Perumal		
	Psychology of HCI ⁸ (I563) ^{1 & 2}	T - MacDorman	Prototyping for Interactive Systems (I564) ^{1 & 2}	W - Ough		
	HCI I (I541) ^{1 & 2}	R - Bolchini	Thesis or Project (I694)	Arr - Faculty		
SPRING	HCI II (I561) ^{1 & 2}	W - Bolchini	Thesis or Project (I694)	Arr - Faculty		
	Usability & Evaluative Methods (I543) ^{1 & 2}	R - Bolchini	Elective ⁴			
	Elective ⁴		Elective ^{4 9}			
SUMMER	As needed ⁷	Arr - Faculty	As needed ⁷			Arr - Faculty

Elective Course Selection⁵

INFORMATICS COURSES

I503	Social Impact of Information Technologies (3 credits)
I505	Informatics Project Management (3 credits)
I510	Data Acquisition and Lab Automation (3 credits)
I512	Scientific Data Management (3 credits)
I530	Seminar in Health Informatics Applications (3 credits)
I534	Seminar in HCI (1-3 credits)
I535	Clinical Information Systems (3 credits)
I540	Data Mining for Security (3 credits)
I550	Legal and Business Issues in Informatics (3 credits)
I551	Independent Study in Health Informatics (1-3 credits)
I552	Independent Study in Bioinformatics (1-3 credits)
I554	Independent Study in HCI (1-3 credits)
I604	HCI Design Theory (3 cr.)
I624	Advanced Seminar I in HCI (3 cr.)
I634	Advanced Seminar II in HCI (3 cr.)

MEDIA ARTS AND SCIENCE

N500	Principles of Digital Arts Production (3 cr.)
N502	Digital Media Motion and Simulation Methods (3 cr.)
N503	Digital Media Application Design Processes (3 cr.)
N504	Advanced Interactive Design Applications (3 cr.)
N506	Media Arts and Technology Project (3 cr.)
N510	Web Database Concepts (3 cr.)

PSYCHOLOGY

PSY570	Industrial Psychology (3 cr.)
PSY572	Organizational Psych (3 cr.)
PSY601	Experimental Design (3 cr.)
PSY615	Intro to Physiological Psychology (3 cr.)
PSY640	Survey of Social Psychology I (3 cr.)
PSY655	Cognitive Development (3 cr.)

COMPUTER SCIENCE

CSCI 503	Operating Systems (3 cr.)
CSCI 504	Concepts in Computer Organization (3 cr.)
CSCI 506	MGMT of Software Develop. Process (3 cr.)
CSCI 507	Object-Oriented Design and Program (3 cr.)
CSCI 536	Data Comm. and Computer Networks (3 cr.)
CSCI 537	Intro to Distributed Computing (3 cr.)
CSCI 541	Database Systems (3 cr.)
CSCI 550	Computer Graphics (3 cr.)
CSCI 552	Adv Graphics and Visualization (3 cr.)
CSCI 565	Programming Language (3 cr.)

DESIGN – HERRON SCHOOL OF ART & DESIGN

HER-V501	Seminar: Intro to Design Thinking (1.5 cr.) ⁶
HER-V502	Seminar: Intro to Human Factors in Design (1.5 cr.)
HER-V511	Methods 1: People-Centered Design Research (3 cr.)
HER-V521	Methods 2: Design Analysis (3 cr.)
HER-V531	Methods 3: Design Synthesis (3 cr.)
HER-V541	Methods 4: Design Evaluation (3 cr.)
HER-R511	Studio: Designing Integrated Experiences 1 (3 cr.)
HER-R512	Studio: Designing Integrated Experiences 2 (6 cr.)

OTHERS

SLIS-S 532	Info Architecture for the Web (3 cr.)
SOC-R551	Quantitative Methods - Sociology (3 cr.)
STAT511	Statistical Methods 1 (3 cr.)
STAT522	Sampling and Survey Techniques (3 cr.)
STAT524	Applied Multivariate Analysis (3 cr.)

Note:

¹ Courses that are part of the HCI Certificate Program.

² Courses offered online.

³ This plan of study is only intended for full-time students. Part-Time students should take whatever courses are available each semester.

⁴ Select from Elective Course list. Students should also check each semester for new or other course offerings of interest.

⁵ Some elective courses may have prerequisites; so students should check with instructors before enrolling.

⁶ Graduate design courses at Herron are only offered during the day; as of right now.

⁷ Students may use the summer for a variety of purposes, e.g., preparation for their thesis or project research, elective courses, etc.

⁸ In the Fall semester, students may switch/swap Psychology of HCI for Introduction to Informatics.

⁹ Master's students may take I624 Advanced Seminar I in HCI (3 cr.) and I634 Advanced Seminar II in HCI (3 cr.) as an elective.

The course is taught each spring in alternating years; primary instructor, Dr. Faiola.

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