Human-Computer Interaction Design

Master of Science

Program Handbook

Luddy School of Informatics, Computing, and Engineering
Indiana University, Bloomington
2024/2025 Academic Year
Version 1.0

Contents

Welcome & Introduction

Colin M. Gray, Ph.D.
HCI/d Program Director

Introduction

Welcome to the 2024-2025 academic year! I am the Human-Computer Interaction Design (HCI/d) Program Director and am excited that you are part of the HCI/d Masters Program and the Luddy School of Informatics, Computing, and Engineering.

IU HCI/d is now in its third decade of world-class HCI educational experiences, and hundreds of our alumni work in UX, strategy, and director roles at companies around the world—many in leadership and management positions. My goal as director is to honor this tradition of excellence, but also continue the timely evolution of one of the world's leading HCI programs. We began to investigate and put into place some major program changes during the last academic year, and this year will mark the beginning of our transition to a new set of program requirements and evolved studios.

This is an exciting time to do impactful work in HCI, and my goal is for you to enter the workforce prepared for the immediate challenges you might face, but also have knowledge and skills that help you to remain relevant many decades into the future.

This handbook will aid you in understanding core aspects of our program structure, opportunities to specialize and learn what is unique about yourself as a designer, and policies and procedures. This handbook includes many elements from several past program directors, and I gratefully acknowledge their contributions upon which I will build in this coming year.

Best,

Welcome & Introduction

Program History and Focus

The IU HCI/d program was founded in 2002, and was arguably the first in the USA to emphasize design as an equal partner to HCI. The original vision, updated to reflect today's technologies and trends, has been crafted to lay the groundwork for students to grow rapidly into sought after design leaders. Over the past 20+ years, we have sustained a tradition of excellence in teaching and scholarship. Our program faculty have expertise across numerous areas of design research and practice.

Our program offers a unique graduate experience that creates design professionals who will shape the future of design. Traditionally, HCI has been the domain of engineering and psychology. At IU, we approach this discipline from the perspective of design. Our focus goes beyond simply using technology to solve a problem—it is about creating an experience that will be functional, intuitive, and even delightful for the people who use it.

Students from a variety of backgrounds, from computer science to the liberal arts, come together to study and practice the design of technology-enabled experiences, creating a close-knit, high collaborative and imaginative group. Our program includes a focus on transdisciplinary learning of HCI and design concepts in a studio-based educational environment, and through these learning experiences, students build relationships and skills that continue long after they graduate.

Your Program Team

The HCI/d program is supported by many individuals in the Luddy School, including core faculty, affiliated faculty, administration, and staff.

Core HCI/d Faculty

These faculty will teach your foundational courses in HCI/d and may also offer electives that are relevant to your interests.

Colin M. Gray,
HCI/d Program Director
Associate Professor of Informatics

Eli Blevis
Professor of Informatics

Elizabeth Kaziunas
Assistant Professor of Informatics

Erik Stolterman Bergqvist
Professor of Informatics

Austin Toombs
Associate Professor of Informatics

Graduate HCI/d Faculty

Jenny El-Shamy
Senior Lecturer

Kayce Reed-Buechlein
Adjunct Lecturer

Michael Stallings
Adjunct Lecturer

Undergraduate Core Faculty

Shunying An Blevis
Lecturer

Phil Jordan
Lecturer

Your Program Team

Affiliated HCI/d Faculty

These faculty offer electives that are relevant to core HCI/d themes or engage in other ways with the HCI/d program.

Animal-Computer Interaction

Patrick Shih
Assistant Professor of Informatics

Christena Nippert-Eng
Professor of Informatics

Computing, Culture, & Society

Christena Nippert-Eng
Professor of Informatics

Jennifer Terrell
Senior Lecturer, Informatics

Crisis Informatics

David Wild
Professor of Informatics and Computing

Health

James Clawson
Assistant Professor of Informatics

Dana Habeeb
Assistant Professor of Informatics

Katie Siek
Professor of Informatics

Human-Robot Interaction

Selma Šabanović
Professor of Informatics and Associate Dean for Faculty Affairs

Information Science

Kate Wehner
Adjunct Instructor, Information and Library Sciences

Security & Privacy

Jean Camp
Professor of Informatics

Apu Kapadia
Professor of Computer Science and Associate Dean for Graduate Studies

Strategy and Product Management

Travis Brown
Senior Executive Assistant Dean

Kayce Reed-Buechlein
Adjunct Professor, Informatics

Visualization

Yong-Yeol Ahn
Associate Professor of Informatics

Visual Design

Jenny El-Shamy
Senior Lecturer, Informatics

Other Areas

Akesha Horton
Director of Curriculum and Instruction

Samantha Merritt
Adjunct Instructor, Informatics

Brian Wood
Lecturer, Informatics

Justin Wood
Associate Professor of Informatics

Your Program Team

Program Staff and Administration

People you may interact with:

HCI/d Program Director

Colin M. Gray
Associate Professor of Informatics

Graduate Admissions

Shawn Linn Davenport
Graduate Manager of Admissions

Graduate Studies

Mary Ann Miller
Associate Director of Graduate Student Services

Career Services

Carleigh Hannon
Director of Career Services

Macy Harmon
Emma Raver
Employer Relations

David Gregoire
Career Education

Jodie Tadlock
Julia Newnum
Megan Walsh
Career Coaching

Administration resources:

Graduate Advising

gradvise@iu.edu

Career Services

luddycareers@iu.edu

Other Graduate Services

gradvise@iu.edu

Website

https://informatics.indiana.edu/programs/ms-hci.html

HCI/d MS Program Structure (New)

Curriculum Map (for students starting in Fall 2024)

Your degree requires 36 credits of graduate coursework, including core courses that are required and elective courses which you can select in collaboration with the program director.

YEAR ONE

Fall		*Spring*	
I541	Intro to HCI/d	I543	Interaction Design Methods
I542	Foundations	*Elective*	
I590	HCI/d Studio Practice	*Elective*	

YEAR TWO

Fall		*Spring*	
I590	HCI/d Studio Practice	I694	Capstone
		Elective	

HCI/d MS Program Structure (Legacy)

Curriculum Map (for students who started in Fall 2023)

Your degree requires 36 credits of graduate coursework, including core courses that are required and elective courses which you can select in collaboration with the program director.

YEAR ONE

Fall		*Spring*	
I541	Intro to HCI/d	**I543**	Interaction Design Methods
I542	Foundations	**I561**	Meaning & Form
Elective		***Elective***	

YEAR TWO

Fall		*Spring*	
Elective		**I694**	Capstone
		Elective	

HCI/d MS Program Structure

Program Core

The program core courses include a broad introduction to HCI, design, and the many disciplines that HCI draws from and informs. The sequence includes extensive collaborative design work conducted in our core studios (I541 and I543) and opportunities to practice skills on projects with industry partners (I590). This sequence culminates in a capstone in the second year.

I541: Introduction to HCI/d

This course offers an introduction to the fundamental components of Human-Computer Interaction Design. Using a collaborative studio approach, students build their research, prototyping, and evaluation skills and are introduced to key concepts and methods in conducting human-centered design work.

I542: Foundations of HCI

This course offers a survey of the field of Human-Computer Interaction, introducing the main themes of HCI set in a historical context. Readings also demonstrate how HCI has addressed perspectives from other disciplines.

I590: HCI/d Studio Practice

This course provides students an opportunity to work on real-world projects with external partners in a collaborative studio environment. Using a human-centered approach, students work in teams on an external project, iteratively forming and addressing the project requirements with input from the external partner and the instructional team.

I543: Interaction Design Methods

This course continues to build student skills in Human-Computer Interaction Design. Using a collaborative studio approach, students extend their research, prototyping, and evaluation skills and are introduced to advanced research and design methods. Students are exposed to multiple philosophies of design work and relevant forms of design argumentation.

I694: HCI/d Independent Capstone

This course supports students as they pursue their own independent project on a topic mutually agreed upon by the student and instructional team. Students will pursue a design-focused project, choosing one of four different types: interaction design, user research for design, service/strategic design, and design scholarship.

HCI/d MS Program Structure

Specialization Opportunities

Students select electives to build further areas of specialization that inform to their unique design perspective. We view specialization quite broadly, using the core HCI/d sequence as a foundation through which other forms of disciplinary, content, and methods knowledge can be connected.

Types of Specialization to Consider

The notion of "specialization" is not monolithic. Rather, it refers to the unique entanglement of knowledge, skills, abilities, and perspectives each student enters the program with and then extends through their coursework and other experiences. Consider three main types of specialization as you select your electives:

1. Job Role

What types of HCI work will your future job focus on? Do you want to focus on the development of user interfaces (UI designer), conducting research to inform design outcomes (UX researcher), lead teams to connect research and evaluation to product decisions (product manager), combine technical and UX knowledge (UX engineer), or work on a combination of skills (UX generalist)?

Ask yourself: *does this elective help me deepen my knowledge in the areas I want to focus or help me work better with other people in cross-functional teams?*

2. Industry Type or Sector

What kind of industry do you want to work for? Do you want to support healthcare professionals, gig workers, teachers and students, or non-profits? Do you want to work in a large Fortune 500 company? An agile start-up? Somewhere with robust mentoring or a place where you will have to build a design culture?

Ask yourself: *does this elective help me to better understand certain types of business models or sectors? For instance, agricultural technology requires different considerations than building productivity software.*

3. Content Knowledge

What kinds of knowledge do you expect to need on a regular basis in your role? Will you be working with a lot of data, where visualization and data science skills might be useful? Interfacing with diverse stakeholders or in multiple countries, where knowing multiple languages is a value-add? How might you connect your expertise from your undergraduate degree to your HCI/d knowledge?

Ask yourself: *does this elective help me build skills which enable my core HCI/d skills to be more effective? What do I already know that differentiates me from other people with the same educational training?*

HCI/d MS Program Structure

Electives

The recommended electives can be selected without additional approval from the Program Director. It is possible for particular students to tailor their particular program by selecting with approval of the Director alternative graduate classes (numbered 500 or above) from across the University.

Electives can be from any school or college at Indiana University with courses related to the student's area of specialization, including other areas in Luddy. Courses that have appealed to our students can be found in the Eskenazi School of Art, Architecture, and Design, the Department of Communication and Culture, the Media School, the School of Education, and the Kelley School of Business. Please note that other schools are not required to allow HCI/d students to participate in their courses. Independent Study or Internship Credits are sometimes possible as an additional alternative, as described later in this Handbook.

An up-to-date and searchable version of this list can be found at the linked **Google Sheet**.

HCI/d-Specific Electives

- INFO I544 Experience Design
- INFO I549 Advanced Prototyping
- INFO I604 HCI Design Theory

Animal-Computer Interaction

- INFO I511 ACI Methods
- INFO I514 Seminar in ACI

Artificial Intelligence

- INFO I513 Usable Artificial Intelligence
- CSCI B551 Elements of AI
- CSCI B657 Computer Vision

Data Visualization

- INFO I422/I590 Data Visualization
- INFO I601 Introduction to Complex Systems
- CSCI B565 Data Mining

Information Architecture

- ILS Z515 Information Architecture
- ILS Z604 Information Architecture in Practice

Physical and Digital Prototyping

- INFO I549 Advanced Prototyping
- INFO I590 Topics: Prototyping with Arduino Tools
- INFO I590 Topics: Visual Design for HCI
- INFO I540 Human-Robot Interaction
- INFO I590 Topics: Cross Platform Mobile Programming
- INFO I590 Mobile HCI Design

Product Management and Strategy

- INFO I567 Design Strategy
- INFO I590 Topics: Product Management
- INFO I590 Topics: Creativity and Innovation in Technology

HCI/d MS Program Structure

Electives (continued)

UX Research

» INFO I512 Direct Observation and Design

VR, AR, and XR

» INFO I590 Topics: Introduction to Virtual Reality
» INFO I590 Topics: Creating Virtual Assets
» INFO I443/I590 Building Virtual Worlds

Other

» INFO I590 Topics: Smart Cities
» INFO I590 Topics: Disney: Tech Tourism & Leisure

Policies and Procedures

Internships

Internships are integral to the program due to its professional orientation. We do not require internships as part of our curriculum only because we cannot guarantee that every student will be offered an internship. Nonetheless, we strongly encourage every student to seek opportunities for an internship and integrate such internships into their program of study where possible.

The internship must offer opportunities to develop skills in human-computer interaction (HCI), interaction design, experience design, and/or strategic design planning. Internships may focus on the acquisition of technical skills, research skills, or context- or domain-specific skills that are relevant to HCI/d.

CPT Eligibility and Requirements

CPT, or Curricular Practical Training, is the mechanism for non-US citizens or permanent residents to get professional experience (e.g., an internship) during their program. If you are not a US citizen or permanent resident, you must receive authorization from the Office of International Services (OIS) before you begin work.

For international students, the first internship is nearly always approved, but must take place after a minimum of 30 weeks of training (i.e., during the summer between the first and second year. A second internship (i.e., in the fall of the second year) is rarely approved and requires substantial documentation per the criteria above. A third internship is not possible to approve and will not be recommended by the program director. No internship can be taken as a CPT experience in the final semester prior to graduation.

Internships with Credit

Students can receive credit for an internship, but these credits are available only when there is a clear learning experience that extends above and beyond what would be considered normal for the practical experience anyone gets from any internship. To earn credits, the student needs to make a well-argued case that their internship is special in some way, and that it will lead to learning experiences that equal those of a formal course. This means that practical experience is not enough. To reach the same level of learning outcome as a course, the practical experience must be combined with academic and professional readings and a synthetic reflection that relates readings with practical experiences.

There are two key required components for a credit-bearing internship: an advisor and a final written summary:

Advisor The student must have an advisor in the organization in which the internship takes place. This individual has to agree to be the advisor and to take the responsibility for this additional work. The advisor should also agree to be a contact person with the academic advisor. It is the student's responsibility to find a faculty member who is willing to serve as the academic advisor.

Written Summary The internship must result in a written document that describes the student's practical experience, reflection and synthesis of the readings they completed, and relationships among these elements. The document should be well argued, well referenced, and complete. The final document will be graded by the academic advisor. The academic advisor must receive input from the organizational advisor on the quality of the work of the student. Such internships may be taken under the course number I591, I798, or as part of I694 for 3 credits.

Internships without Credit

If an internship is taken through a CPT experience, the student must register for at least one credit. Such internships may be taken under the course INFO-I 591, and the work contract dates must be completely contained within the academic term the student is registered under.

Policies and Procedures

Internships (continued)

Unpaid Internships

Our program does not endorse nor recommend unpaid internships.

Timing and Other Constraints

Internships may run concurrently with classes provided only that students meet all of their study obligations in their enrolled courses. Internships may also be related and integrated with work in other courses according to the judgement of the instructors when the internship is closely related to the project themes. Internships must not interfere with a student's ability to graduate on time. International students must secure necessary permissions through the Office of International Students (OIS) whose word is final as a matter of legal compliance.

CPT Procedures

In most cases, you should select your internship carefully and plan on having only one CPT experience during your program. In rare cases, a second internship may be possible but this requires substantial documentation to show how it is integral to your degree and not duplicative of a first internship.

To request a second internship, you must write a statement detailing exactly what you will be doing in your internship, how it conforms to the criteria described above, and how the internship would fit into your studies. This statement must be provided to the program director, who will recommend for you to continue with the approval process or reject your request.

If the program director allows your request to continue, if you are an international student, your request will need to be approved by OIS. In this case, your statement must also provide an account of how this internship differs from prior internships and what you will learn that you did not learn in prior internships. OIS looks for the following information when approving a second curricular practical training (CPT):

> *Please list the specific differences in duties between this internship and any prior internships. The more information, the better. You should include information such as (a) what you might have special access to or the opportunity you will have in the second part of your internship that you wouldn't necessarily have exposure to in your classes and (b) how that would differ than the first part of your internship. Is there a specific technology, a set of data or population or use of specific methods you would gain, for example? How will your new internship fit into the thematic areas listed earlier in this letter?*

Specify if and how many credits you are expecting to receive for your internship and send your statement to Luddy Graduate Advising **gradvise@indiana.edu** and to the MS HCI/d program director. The director will either endorse your request or ask for more information or decline to endorse your request. With the endorsement, Luddy Graduate Advising will fill in the appropriate request to OIS and file the form with them. OIS will make a decision which will be final.

Policies and Procedures

Independent Studies

The purpose of an independent study (IS) is to present an opportunity for students to create a learning experience when there is no formal course available about a particular topic. The success of an IS depends on some pre-conditions and also requires a process and some documents.

An Independent Study is a privilege, not a right:

» A student needs to find a faculty member who agrees to be the advisor and who will grade the work. The student also needs to present a sufficient plan (syllabus) for the IS.

Faculty Members are not obligated to advise independent studies:

» Professors are not required to advise independent studies by the school and is often constrained by other research responsibilities. A professor may be more likely to serve as an advisor if the topic is of interest to the professor, or if the advisor wants to work with a particular student, based on earned rapport.

Teams

Students may propose an independent study alone, or as a team of two, but no more than two.

The Process

Use the following process to establish an independent study:

» The student(s) need to develop an idea and present the idea to potential faculty advisors.

» A professor needs to be willing to accept the role of advisor for the proposed Independent Study.

» The student(s) need to write an independent study syllabus that is approved by the advisor.

» The student(s) need to register for an independent study and attach the syllabus to the independent study form.

» There has to be a complete syllabus for the independent study before the student(s) register (or at least a final approval from the advisor that the independent study is well enough developed).

» At the end of the independent study, the student(s) need to give the material that will be graded to the advisor, in a well-organized form.

The Independent Study Syllabus

A syllabus has to contain the following sections:

» A title that describes the work.

» A section that describes the topic, why is has been chosen, why it is important for the student(s), and how it will contribute to the students' overall education.

» A section that describes the learning outcomes of the independent study.

» A section that describes the activities that will be completed during the independent study.

» A section that lists the readings that will be part of the independent study.

» A section that describes the outcomes (e.g., paper, prototypes) of the independent study.

» A section that describes how and what will be graded and a deadline when the final material will be delivered.

» A fairly detailed plan for the semester, with planned activities, readings, outcomes, and so forth—roughly similar to a course schedule.

Policies and Procedures

Plagiarism

One of the highest values in an academic setting is the generation of new ideas while building on the work of others. Not providing appropriate credit when borrowing, either directly or in your own words, is a violation of the **Indiana University Code of Student Rights, Responsibilities, and Conduct**. The violation is called "plagiarism" and it is considered a serious ethical violation in U.S. academic institutions.

Specifically, the Code defines plagiarism as:

"presenting someone else's work, including the work of other students, as the submitting student's own. A student must not present ideas or materials taken from another source for either written or oral use without fully acknowledging the source, unless the information is common knowledge. What is considered 'common knowledge' may differ from course to course.

1. A student must give credit to the original source whenever:
    a. Directly quoting another person's actual words, whether oral or written;
    b. Using another person's ideas, opinions, formulas, or theories;
    c. Paraphrasing the words, ideas, opinions, or theories of others;
    d. Borrowing facts, statistics, or illustrative material; or
    e. Submitting materials assembled or collected by others in the form of projects or collections
2. A student may not submit or present as their own work materials taken in whole or part from a commercial term paper company, files or papers prepared by other persons or programs, or documents found on the internet."

We urge all students entering the program to review the entire **Code** to become familiar with your rights and responsibilities as an IU student. To learn more about plagiarism related to the field of HCI, see the **ACM Policy on Plagiarism, Misrepresentation, and Falsification**.

You can also learn more at the following site created by IU faculty: **https://plagiarism.iu.edu/** Failure to follow the university's guidelines could result in failure in your course and expulsion from IU and the HCI/d graduate program.

All plagiarism standards also apply to the use of Generative AI tools. You must cite the use of any such tools in your work, indicating when the tool was used, with which materials, and what prompts were used.