

Spring 2025 HCII Undergraduate Program Information Session

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Spring 2025 HCII Additional Major & Minor Admissions

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Agenda

- Overview & Introductions
- HCI Additional Major
- HCI Minor
- Admissions process
- Q&A



Most of Computer Science is about computation and the computer itself.

HCI (Human Computer Interaction) is about people and computers:

- Invent novel interactive digital systems and services that benefit humans - individuals, groups, or whole institutions
- Understand how interactive digital systems and services influence people



HCI tied closely with CMU

- Book that coined the term
- Three key founders of HCI (<u>Newell</u>-Simon)

Human-Computer Interaction Institute (HCII)

- Founded in mid 1990s
- Designers + Behavioral Science + CS
- First Master's, First PhD program in HCI
- Double major, minor, primary major in HCI
- (Immodestly) We're best in the world in HCI

The Psychology of Human-Computer Interaction
STUART K. CARD THOMAS P. MORAN ALLEN NEWELL



The Philosophy of the HCI Additional Major and Minor

Take excellent students with depth in one discipline relevant to HCI and give the educational opportunity to learn a set of core skills in HCI.

- Help the students become effective members of interdisciplinary teams in industry
- Prepare students for leadership in HCI-related industries



What students like about the HCI Additional major and HCI minor

- Interdisciplinary
- Project focused
- Flexible

"Working with people from other disciplines "

"The interdisciplinary nature. I learned a lot from having courses outside my major and from working with people that have different focii"

"Courses were project oriented"

"Applying the skills I learned in classes to research projects"

"Without this major, I would have never discovered my enjoyment for creatively solving problems with constraints and business needs."

"The professors. I was lucky because all of the core classes ... were taught by professors who were well-respected in the field and clearly knew their stuff"





Why study HCI?

- Web services and mobile apps are the hottest start-ups in the world and HCI is in the middle of that
- HCI is *the* central topic in computing the best way to build up some computer skills and credibility
- HCI is a good path towards being a product manager, or entrepreneurs
- Agile development to understand user needs helps to create innovative products – in HCI and in business



Hiring Companies in Recent Years

- Amazon
- Apple
- Applied Predictive
- Capital One
- Carnegie Mellon
- Deloitte
- eBay
- Etsy
- Facebook/Meta
- Firstborn
- Google
- Hudson River Trading

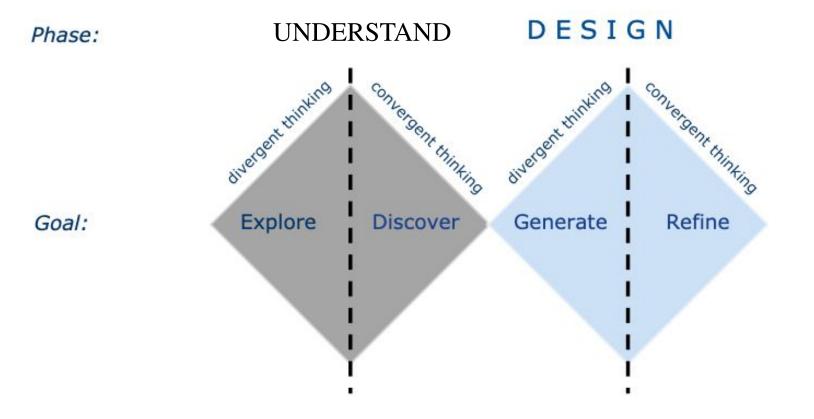
- Huge
- Idean
- McKinsey & Company
- Microsoft
- Pinterest
- Pricewaterhouse Coopers
- Procore Technologies
- SapientNitro
- Venmo
- WillowTree
- Yext
- Zazzle

For international students

 HCI Additional Major qualifies you for STEM OPT.

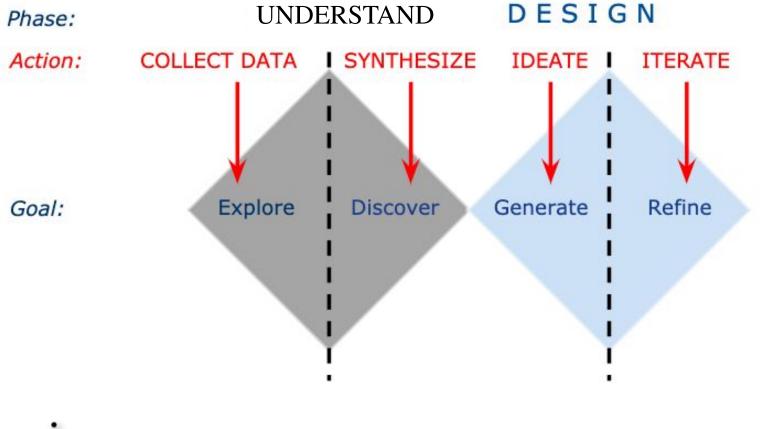


The Human-Centered Design Approach



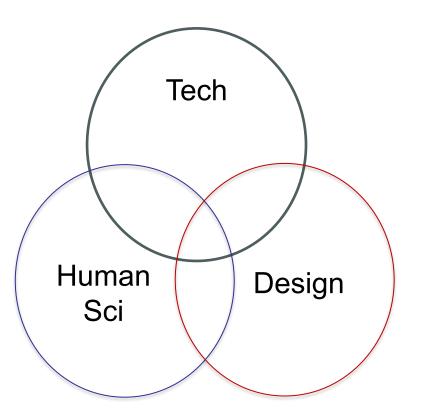


The Human-Centered Design Approach



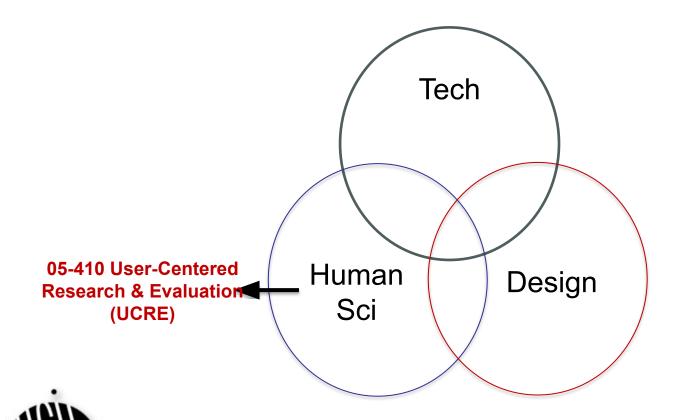


3 pillars of HCI and example core classes





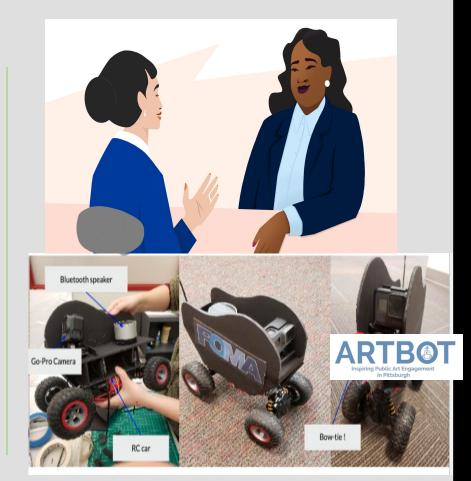
3 pillars of HCI and example core classes



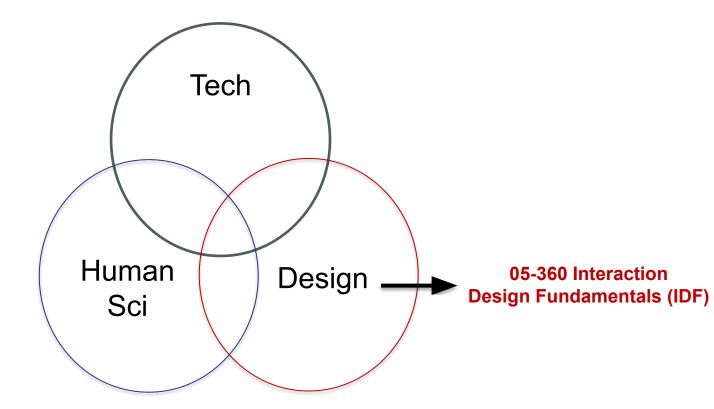
05-410 User-Centered Research & Evaluation

UCRE is an overview course, focused on methods to understand people's needs and workflows, and to evaluate usefulness, usability, desirability of designs

- Observational methodologies involving field work
- Interview techniques to elicit user needs
- Analyze quantitative data from systems and users
- Evaluation techniques to test prototypes and existing systems



3 pillars of HCI and example core classes



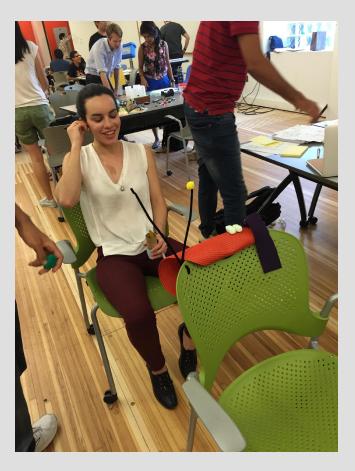


05-360 Interaction Design Fundamentals

Interaction Design Fundamentals introduces the human-centered design process as well as fundamental interaction design principles, methods, and practices.

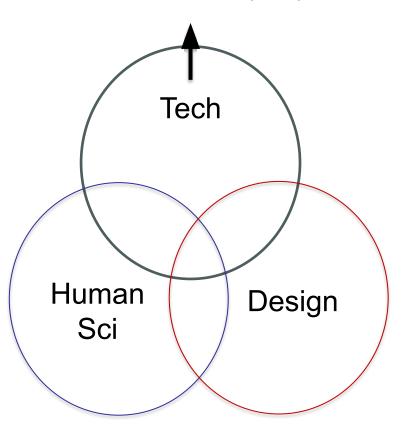
Learning goals:

- Generate persuasive design artifacts that effectively communicate design goals.
- Explore and experiment with various interaction design materials.



3 pillars of HCI and example core classes

for User Interfaces (SSUI)





05-431 Software Structures for User Interfaces (SSUI)

This course covers the basic and detailed concepts that go into building software to implement user interfaces (UIs).

Cover the Tools and Skills for a variety of "front-end" programming contexts, including

- Conventional graphical user interface (GUI) programming for mobile apps (phones, watches and other wearables), web apps, and regular desktop applications.
- Data-driven and conversational (AI) user interfaces (including speech and "chat bots")
- Front-end programming for visualizations, games, 3D, and virtual and artificial reality (VR and AR)



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Overview of 5 HCII Undergraduate Programs

(The numbers shown here are the total number of students across multiple years)

Primary major in HCI: started in 2020; open to SCS students

19 students (students declare in spring)

HCI Concentration: open to SCS students

25 students (declare all year)

Additional Major in HCI: open to other undergrad colleges

110 students (application in March)

Minor in HCI: open to other undergrad colleges; not SCS

177 students (application in March)

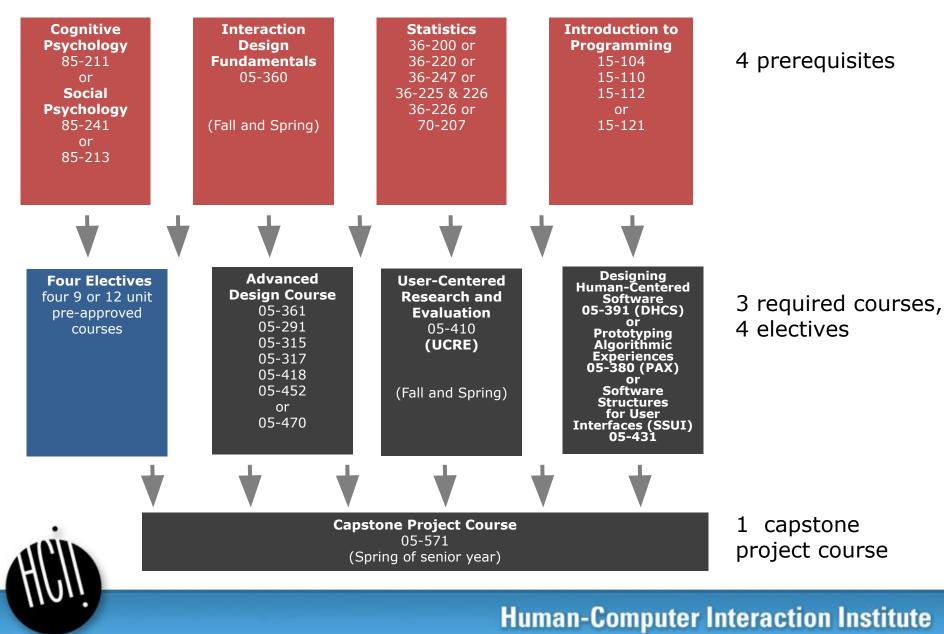
Accelerated Master's in HCI (MHCI): open to primary major or additional major in HCI

6 currently; ≅20 apply each year (application in November)

Total: 337 students



HCI Additional Major Requirements

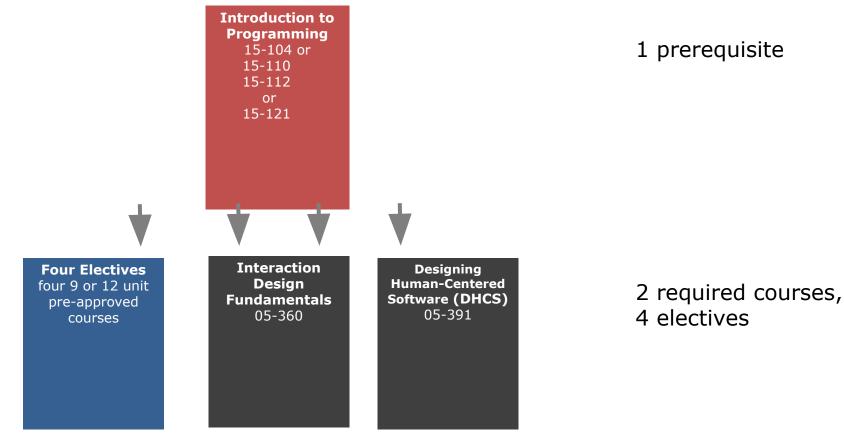


AP/IB Credit?

- Credit received for Programming (15-110 or 15-112) can fulfill the Programming prerequisite
- Credit received for AP Statistics (36-200 or 70-207) can fulfill the Statistics prerequisite
- There is NO credit for AP Psychology towards the HCI prerequisite - you must take 85-211, 85-241 or 85-213



HCI Minor Requirements





Comparison: HCI Additional Major & HCI Minor

	HCI Additional Major	HCI Minor
Admission	Application & admission required	Application & admission required
Prerequisite	 Freshman-level programming (15-110 or 15-112 or 15-121 or 15-104) Statistics (introductory) Cognitive or Social Psychology (85-211 or 85-241 or 85-213) Interaction Design Fundamentals 05-360 	Freshman-level programming (15-110 or 15-112 or 15-121 or 15-104)
Core courses	 Advanced Design Course User-Centered Research & Evaluation (UCRE) 05-410 Programming/Prototyping 05-391 (DHCS) or 05-380 (PAX) or 05-431 (SSUI) Senior Project (Capstone) 05-571 	 Interaction Design Fundamentals 05-360 Designing Human-Centered Software (DHCS) 05-391
Electives	4 HCI electives	4 HCI electives
Double counting allowed	2 courses with primary major	2 courses with primary major



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Who can apply?

- Any major can apply
- You do not need to have completed any prerequisites before you apply
- Typically sophomores apply
- Freshmen may apply, but the bar is higher (due to limited info)
- Juniors may apply if they can complete the program in the time remaining
- Repeat applications are welcome



Timeline: Applying to the HCI Additional Major & Minor Spring '25

- February 28: Applications open
- March 14, 11:59pm: Applications due
- March 31st: Notifications of acceptance
- April 1st: Fall registration info session**
- April 7th: Fall registration begins



**5pm in GHC 6115

Application: HCI Additional Major

Personal statement

- Show writing ability & knowledge of the area
- Highlight HCI experience
- Relate HCI to personal interest and/or career goals
- Unofficial Transcript
 - QPA ranges from 3.0 to 4.0, with 3.5 typical
- Anticipated course schedule/plan
 - spreadsheet with clearly marked courses is best
- Optional: recommendation letter, link to online portfolio (include with other materials)
- Admission is limited by enrollment caps on the required courses

Application will be live on this page on February 28



Application Process: HCI Minor

- Unofficial transcript (first-year students must include mid-semester grades)
- Anticipated course schedule/plan (spreadsheet with clearly marked courses)
 - Optional: Link to online portfolio/recommendations
 - Admission is limited by enrollment caps on core courses



Application will be live on this page on February 28

Applying to both programs

- If you want to be considered for both the additional major and the minor (in case you do not get into the additional major), you need to apply to both.
- If you apply to the HCI additional major only, you will NOT automatically be considered for the HCI minor. You have to apply to the HCI minor in order to be considered.



Optional Recommendation Letters

 Recommendation letters (optional) can be emailed directly from the recommender to abaisley@andrew.cmu.edu with the subject line "Attn: Recommendation for HCI Admissions/[applicant name]"



Double Counting Courses

- HCI Additional Majors AND HCI Minors are permitted to double count TWO courses with their primary major.
- Prerequisite courses are **not included** in this rule (e.g.:programming, psychology, stats)
- Courses considered to be General Education requirements in your home college/school often do not count toward this rule (but always check to make sure!)



Course Notes for Design Majors

HCI Minors who have a primary major in Design may:

 substitute any HCI (05-xxx) course for 05-360 Interaction Design Fundamentals

HCI Additional Majors who have a primary major in Design may:

• waive 05-360 Interaction Design Fundamentals



Course Substitution: Note for HCI Minors

- 05-430 Programming Usable Interfaces (PUI) and 05-410 User-Centered Research & Evaluation (UCRE) can be used together as a substitute for one of the required core courses for the minor: 05-391 Designing Human Centered Software
- The above substitution equals the 05-391 core requirement and also fulfils one HCI elective requirement



More Information

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Ashley Kosko (HCI Minor) Senior Academic Coordinator <u>akosko@andrew.cmu.edu</u>



For More Information

https://hcii.cmu.edu/academics/hci-undergrad uate/major

https://hcii.cmu.edu/academics/hci-undergrad uate/minor

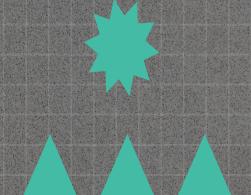
https://hcii.cmu.edu/academics/hci-under grad/additional-major-hci/admissions

HCI Catalog



HCI Major/Minor Info Session





The UX/HCI clubon campus.



Weekly Workshops

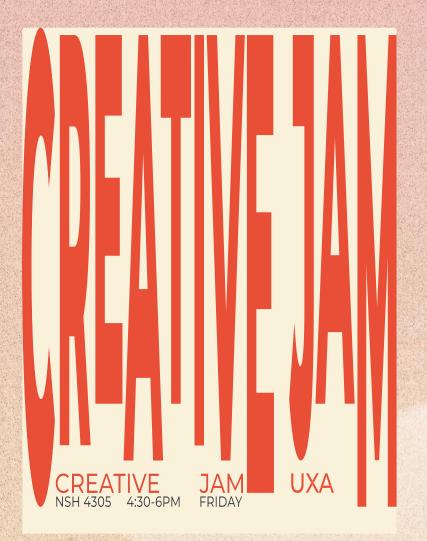
1/28 **Resume x Portfolio Review** Figma 201: autolayout & wireframing 2/4 2/11 Figma 301: design systems & mockups 2/18 Figma 401: prototyping essentials 2/25 Figma 402: prototyping & animations 3/11 Intro to Portfolios 3/18 **Building a Personal Brand** 3/25 How to Build a Case Study 4/1 Showcase Day!



Creative Jams

A space to work on passion projects, improve design skills, learn new tools.

Fridays 4:30-6pm NSH 4305



XHacks

Reimagining Human Connection in the Digital Age

In an era shaped by digital interactions, remote work, and evolving social norms, how can design bring people closer together?



March 14-16th







Luma Event Page

Join our Slack!





Important!!!

- If you want to be considered for both the additional major and the minor, you need to apply to both.
- We will assume preference for the Additional Major if you apply to both.



How can you explore whether HCI is for you?

- Enroll in an elective
- Pick a course you can double count
- Become involved in HCI research (internship or independent study with HCII professor)
- Enroll in one of the core courses (though hard to get in)
 - Designing Human-Centered Systems is a great intro course

