

# Introduction to HCI (Human Computer Interaction)

Fall 2019

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Courses, projects, papers, and more:  
<http://groups.cs.umass.edu/nmahyar/>

Slides adapted from Profs. Joanna McGrenere and Leila Aflatoony

# Instructor

Narges Mahyar

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Office hours: Thursdays 1-2 pm

(\* no office hours on Sept 26 and Oct 24)

Background:

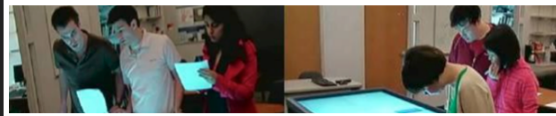
HCI, Information Visualization, Social Computing, Digital Civics, Crowdsourcing, and Design Thinking.

# I build & study human-centered collaborative tools

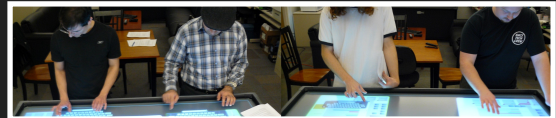
Collocated

Online

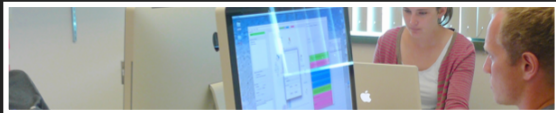
Experts



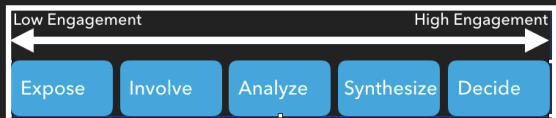
Mahyar et al, InfoVis 2012, **Top 4 VAST papers**



Mahyar et al, HICSS 2013



Mahyar & Tory, VAST 2014, **Best paper award**



Mahyar et al, VIS 2015



Mahyar et al, ISS 2016, **Honorable mention award, Outstanding award**



Mahyar et al, CHI 2018



Design for San Diego (D4SD)



Novices

# TAs

## **Mahmood Jasim**

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## **Grader: Yueying Liu**

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# Acknowledgment

Special thanks to Prof. Joanna McGrenere (UBC) and Prof. Leila Afltoony (GT), whose course materials I will use, adapt, and change for this course.

# Today

- ▶ Brief overview of the course, and who it's for - 20min
- ▶ Icebreaker - 10min
- ▶ Design Thinking Activity (teams of two) - 30min
- ▶ Q&A about the class - 10 min

If you haven't already:

- ▶ Talk to me after class if you have registration issues

# Learning goals for today

- ▶ Be familiar with the course website and how to get access to the course materials
- ▶ Understand the course expectations in general
- ▶ Understand the basic principles and stages of a human centered approach to design

# Course overview

- ▶ The role of design for crafting appropriate systems that truly meet people's needs, abilities, and expectations.
- ▶ This course covers the theories and concepts important for all professionals and researchers that design interactive technology for human use.
- ▶ The course adopts a human-centered design (HCD) approach and teaches a highly iterative process called design thinking.



# Principles of human-centered design



<https://www.nngroup.com/videos/principles-human-centered-design-don-norman/>

# Topics covered

- ▶ Design thinking
- ▶ Human-centered design
- ▶ Design methodologies
- ▶ Field studies
- ▶ Design requirements
- ▶ Prototyping
- ▶ Evaluation methodologies (quantitative and qualitative)

# What kind of a class is this?

- ▶ Project based and interactive: hands-on
- ▶ Group-oriented: team-based learning practices
- ▶ Many strange and unfamiliar new skills
- ▶ Much less coding than other CS courses, but you need to deliver a working prototype
- ▶ Heavy demands on your ingenuity and your people skills

# Course components

- ▶Classes

- ▶~ 30 min lecture, 45 min activity

- ▶Participation

- ▶Attendance, classroom activities, peer review

- ▶Project milestones ~6

- ▶Group-based
  - ▶Most build on one another

- ▶Working classes

- ▶Plenty of in-class time for you to work on team projects

# Expectations

- ▶ Attend all classes, no laptops in the classroom
- ▶ Do assigned prep before class
- ▶ Be a considerate team member and do your share of the work, well and on time
- ▶ Abide by the university academic honesty guidelines
- ▶ Build a working prototype
- ▶ Attend the demo session on **Dec 10th** to present your work

# Grading scheme

Component	Weight	Type
<b>Pop Quizzes</b> (pre-class preparation on readings)	10%	Individual
<b>Midterm Exam</b>	20%	Individual
<b>Deliverables</b> (approximately 6 milestones)	30%	Group
<b>Project Demos</b> (includes 5% peer evaluation)	40%	Group

\* This is tentative, I am still working on some of the milestones.

## Deliverables (~6 project milestones)

- ▶ New methods are introduced about every week.
- ▶ You will “submit” the outcome of applying the method in the context of a project, approximately every other week.

# Homework before next class – PART I

- ▶ Familiarize yourself with the course website
  - ▶ It provides a fuller introduction to the course
  - ▶ Take note of deliverables on schedule page
  - ▶ Pre-readings
  - ▶ Get onto Piazza
    - [piazza.com/umass/fall2019/cs325](https://piazza.com/umass/fall2019/cs325)



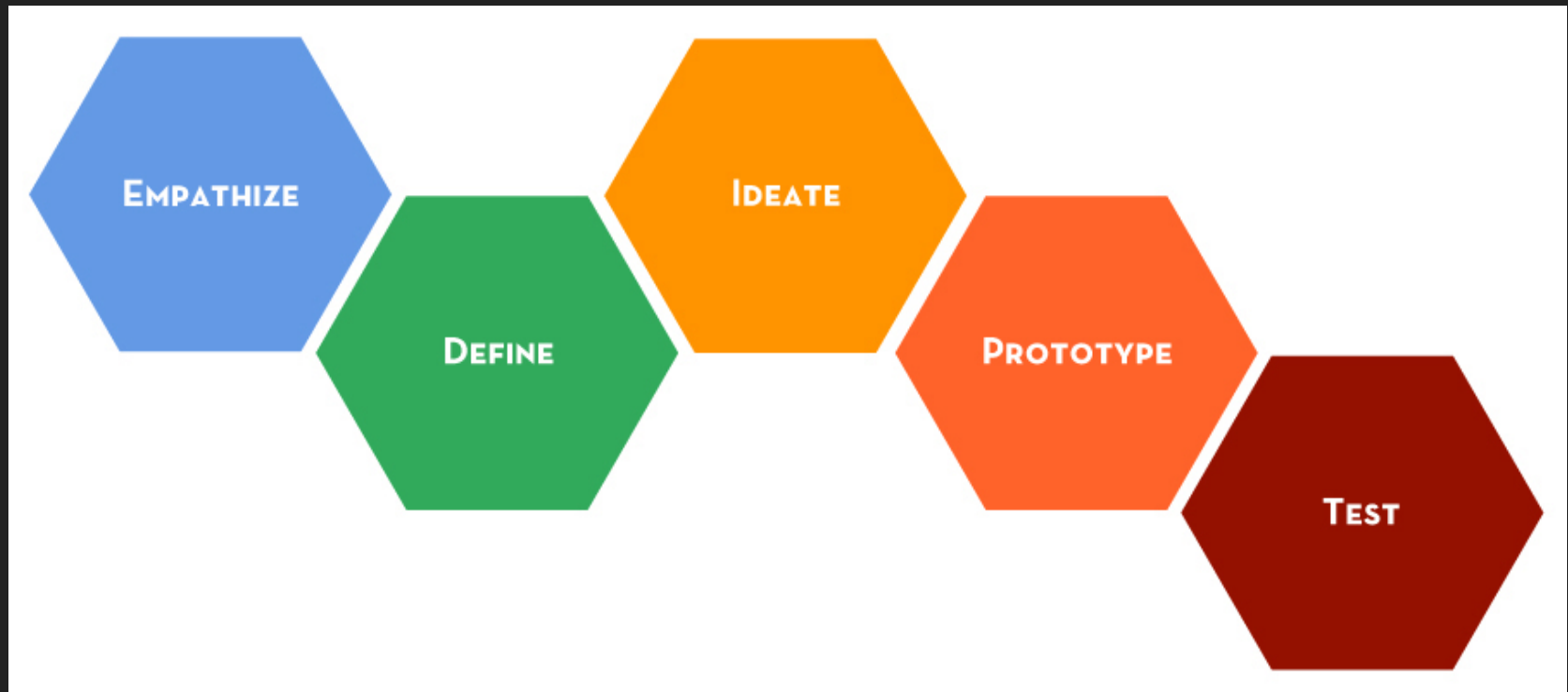
# Course communication

- ▶ Website: <http://groups.cs.umass.edu/nmahyar/teaching/intro-to-hci-cs-325-fall-2019/>
  - ▶ Particularly for schedule / prep information
- ▶ Discussion group (Piazza)
  - ▶ For anything relevant to larger group, including questions. You can create your own discussion post
- ▶ Instructor confidential (email)
- ▶ TAs
  - ▶ Project/ course related questions

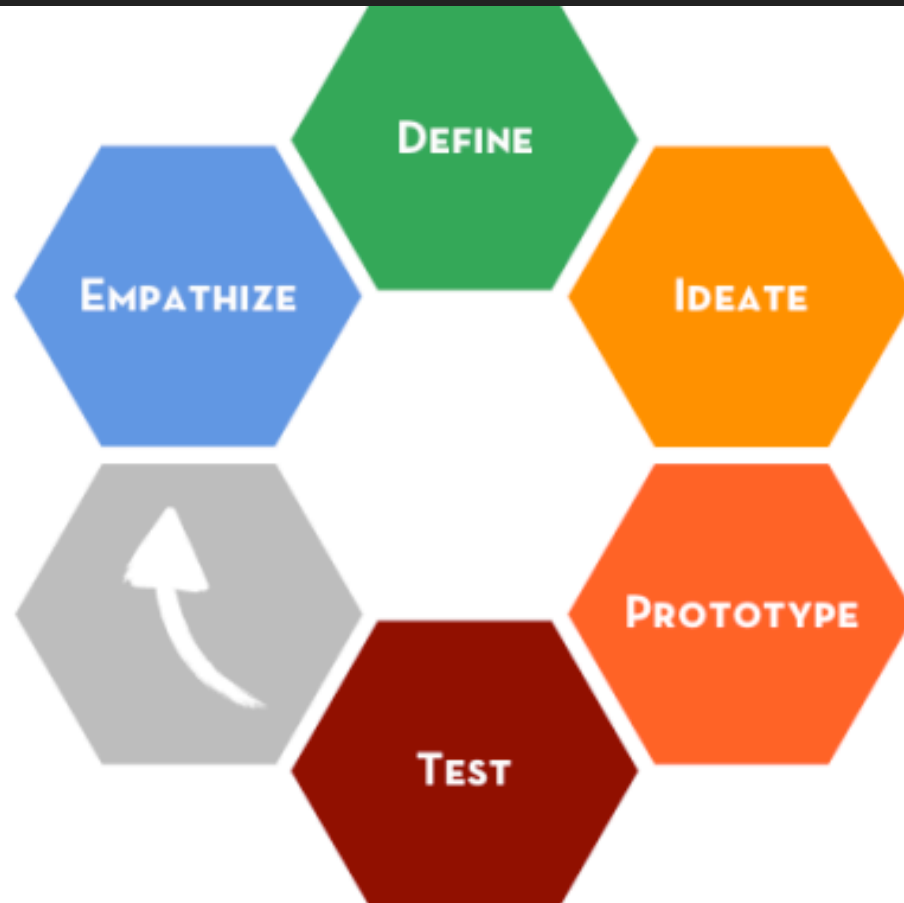
## Icebreaker [5-10 min]

- ▶ State your...
  - ▶ Name, department
  - ▶ Other background
  - ▶ One thing you hope to get out of this class
- ▶ ... all in 10 seconds or less.

# Design thinking



# An iterative process



# Human-centered design (HCD)

Is a design framework that develops solutions to problems by involving the human perspective in all steps of the problem-solving process.

(Wikipedia)

Is the process of ensuring that people's needs are met, that the resulting product is understandable and usable, that it accomplishes the desired tasks, and that the experience of user is positive and enjoyable.

(Norman, The design of everyday things)

# Design Thinking vs. HCD?

- ▶ Differences are not clear cut
- ▶ Conceptually very similar
- ▶ Design Thinking comes from a design tradition and can apply to any design (not specific to interactive technologies)
- ▶ HCD comes out of a more technology-centered tradition (first user-centered design)
- ▶ Design Thinking has a stronger emphasis on solving the right problem and ideating than HCD
- ▶ Can be confusing: Norman calls Design Thinking to be a Human-Centered Design Process

# Design Thinking Activity

- ▶ Worksheet:

- ▶ <https://stanford.io/2R4Fs8c>

- ▶ Link to the video:

- ▶ <https://video.search.yahoo.com/yhs/search?fr=yhs-Lkry-SF01&hsimp=yhs-SF01&hspart=Lkry&p=Virtual+Crash+Course+Video+d+school+design+thinking#id=0&vid=e07823a223629a87008453d539b31942&action=click>

# Homework before next class – PART II

We watched the video up to ...

To do List:

- ▶ Watch the rest of the video at home
- ▶ Complete the prototype and test stages at home
- ▶ Post a photo of your prototype to the Piazza discussion before next class
- ▶ Fill out the first day survey



# First Day survey

▶ <https://forms.gle/UNn4vv5sHnFAbmc87>

# Q&A