Introduction to CSE155

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https://www.theiilab.com/

Lecture notes in this series are based on
- Ahmed Sabbir Arif. 2021. Statistical Grounding. *Intelligent Computing for Interactive System Design: Statistics, Digital Signal Processing, and Machine Learning in Practice*, ACM
- Ann Blandford, Dominic Furniss, Stephann Makri. 2016. Qualitative HCI Research: Going Behind the Scenes. Morgan & Claypool
- Jonathan Lazar, Jinjuan Feng, Harry Hochheiser. 2017. Research Methods in Human-Computer Interaction. Morgan Kaufmann
- I. Scott MacKenzie. 2013. Human-Computer Interaction: An Empirical Research Perspective, Morgan Kaufmann
- Interaction Design Foundation. 2022. Design Thinking
- Lecture notes of Amy Bruckman, Mark Dunlop, Niels Henze, I. Scott MacKenzie, Laura Moody, Albrecht Schmidt, Kami Vaniea

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Instructor

- Ahmed Sabbir Arif
  - Assistant Professor
  - Leads the **Inclusive Interaction Lab** https://www.theiilab.com
  - Mission is to make computer systems more accessible by developing intuitive, effective, and enjoyable input and interaction techniques
  - Email: asarif@ucmerced.edu
- Office hour is by appointment, contact via CatCourses or email

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Teaching Assistants

1. Tafadzwa Joseph Dube tdube@ucmerced.edu
2. Yuan Ren yren5@ucmerced.edu
3. Ghazal Zand gzand@ucmerced.edu

- They will:
  - Lead the labs
  - Help you with your assignments and project
  - Grade some components of the course
  - More about this later…

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CSE 155: Intro to HCI

- Introduces students to the basic concepts in the theory and practice of Human-Computer Interaction (HCI). Teaches how hardware and software design influence the interaction between human and computers to provide insights into the design and development of safe, effective, and enjoyable interactive systems.

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Topics

- The course covers the following topics:
  - History of Human-Computer Introduction
  - Understanding users' needs, desires, and expectations
  - Identifying and modelling human and system factors
  - Interactive system design methodologies, usability testing, and user experience design (UX)
  - Qualitative and quantitative research methods and data analysis
  - Research ethics and working with human subjects
  - Preparing demonstration videos, writing papers, and presentations
- A complete list is available in the syllabus

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General Education

- Approaches to Knowledge: Engineering Science
- Badge: Ethics
- Badge: Practical and Applied Knowledge
- Badge: Quantitative and Numerical Analysis
- Badge: Scientific Method
- Upper Division: Writing in the Discipline
- Upper Division: Crossroads

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Lecture

- Couse material will be uploaded to CatCourses
  - Usually ahead of the lecture, but not always
  - Very important to take notes

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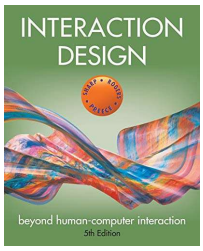
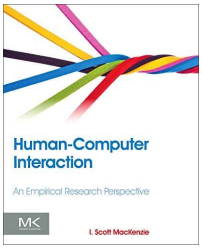
Textbook

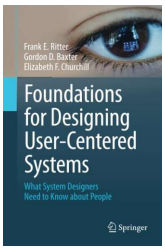
- None, but the following books are recommended
  - Find more recommended books on https://www.asarif.com/notes/SuggestedReading.html



Interaction Design: Beyond Human-Computer Interaction (5th Edition)
Helen Sharp, Jennifer Preece, Yvonne Rogers



Human-Computer Interaction: An Empirical Research Perspective (1st Edition)
I. Scott MacKenzie



Foundations for Designing User-Centered Systems: What System Designers Need to Know about People
Frank E. Ritter, Gordon D. Baxter, Elizabeth F. Churchill

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Labs: 10%

- Labs are led by the TAs
- 2 types of labs
  1. Special topics
  2. General

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Labs: Special Topics

- Special topics labs are dedicated to specific learning objectives
  - Such as how to use a tool or how to create a demonstration video
- 15 minutes presentations, followed by lab assignments
  - There will be 10 lab assignments, 1 point each (10%)
  - Must be completed by the **end of lab**
  - Not all labs will have assignments
    - Will be announced in the previous week

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Labs: General

- To seek assistance with assignments and projects
- The TAs will provide support and guidance
- But will **not**
  - Explain the topics discussed in class
  - Answer questions about the course, e.g., due dates, extensions, etc.
  - Write source code or fix bugs for you

Assignments: 20%

- 4 assignments, 5 points each
  - 2 before and 2 after the midterm
- Posted and submitted through CatCourses
- Will cover the topics learned in class
  - Discussive in nature
- About 1 week to complete an assignment
- Late submissions are **not allowed**

Midterm (20%)

- Posted and submitted through CatCourses
  - Take-home
  - Open book
  - 1.5 hours
  - **No assistance** during the exam

- Tempted structure

• Multiple choice	5 x 1 pts	5 pts
• True/false	5 x 1 pts	5 pts
• Short answers	2 x 2 pts	4 pts
• Case study	1 x 6 pts	6 pts

Final (30%)

- Posted and submitted through CatCourses
  - Take-home
  - Open book
  - 2 hours
  - **No assistance** during the exam

- Tempted structure

• Multiple choice	5 x 1 pts	5 pts
• True/false	5 x 1 pts	5 pts
• Short answers	4 x 2 pts	8 pts
• Case study	2 x 6 pts	12 pts

Group Project: 20%

- Group formation 2 pts
- Source code 5 pts
- Presentation 5 pts
- Report 8 pts

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Group Project: Group Formation

- Due on **Monday, Jan 30** via CatCourses
- Only one submission per group is needed

- How to select groups? 1 pts
  - 3-5 members from the same lab section
  - Those without a group will lose 2 pts and will be assigned to existing groups

- How to select projects? 1 pts
  1. Accounts for users' needs and requirements
  2. Requires software development
  3. Uses a machine learning or recognition component
  4. Builds interaction techniques

  - Check out the Group Formation and Project Selection From

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Group Project: Source Code

- TAs will check your source code on the last week of labs
  - You should run the application in front of them
  - Walk them through the source code
  - Discuss development choices
- TA will grade source code based on:
  - Completion (no compiler or logical errors) 2 pts
  - Approach (modular in nature) 2 pts
  - Effort (challenges addressed in the project) 1 pts

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Group Project: Presentation

- Will be either in the last two weeks of class or in the labs
- 15 minutes
  - 10 minutes presentation
  - 5 minutes questions, answers, feedback
- Presentations will be evacuated on:
  - Organization 1 pts
  - Clarity 1 pts
  - Work distribution 1 pts
  - Demonstration 2 pts

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Group Project: Report

- Between 3-6 pages in an Overleaf template
  - The template provides a rough framework for the report
- Reports will be evacuated on:
  - Overall writing coherence and clarity 2 pts
  - Goals and motivation 1 pts
  - Hardware/software design process 1.5 pts
  - Example use cases or demonstration 1.5 pts
  - Presentation, interpretation of evaluation results 2 pts

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Academic Integrity

- Late submissions are **not allowed**
  - Will result in 0s
- Rubric for plagiarism penalty:
  - Between 10 and 20% -20%
  - Between 20 and 50% -50%
  - Over 50% -100%, and will be reported to the Office of Student Rights and Responsibilities

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