COGS 121
HCI Programming Studio
Spring 2016

Instructor: Nadir Weibel
Website: cogs121.ucsd.edu
HCI Programming Studio

Cognitive Science 121 is the second course in the HCI sequence, focusing on interaction architectures, programming techniques, and cognitive and computational principles for designing effective systems.

COGS: 120 - Interaction Design
+
CSE : 8B - Intro/Computer Sci. Java (II)
OR
CSE : 11 - Intr/Computer Sci&Obj-Ori:Java
Agenda

Schedule
- Weekly
- Quarter
- Lectures

Work
- Readings
- Activities
- Assignments
- Project
- Critiques

Logistics
- Grading
- Communication
- Tools
- DELPHI guest
Weekly Schedule

Design Lecture
**Tuesdays 2:00p-3:20pm, HSS 1330**
*Fundamental concepts, theories and principles*

Tech Lecture
**Thursdays 2:00p-3:20pm, HSS 1330**
*Tools, technologies and techniques for implementing web-based applications*

Studios
*Hands-on practice and collaboration, supported by TAs*

1. **Fridays, 1:00pm-1:50pm, HSS 1346**, Andrew Du & Jingchun Zhou
2. **Fridays, 1:00pm-1:50pm, CSE 2154**, Brian Soe & Jacob Browne
3. **Fridays, 2:00pm-2:50pm, HSS 1346**, Jasmine Roberts & Jingchun Zhou
4. **Fridays, 2:00pm-2:50pm, CSE 2154**, Jesse Qin & Jacob Browne
Quarter Schedule

**Weeks 1 - 5**
Design lectures: Fundamentals of UX design + In-Class activities
Tech lectures: Technologies + Group Assignments
Studios: Quizzes + Group assignments

**Weeks 6-10**
Lectures: Presentations & Design Critiques
Studios: Quizzes & Final Project activities

**Finals Week**
Final Project Presentations
Your Responsibilities

—> do weekly readings
—> attend design lectures
—> attend tech lectures
—> attend studio section … *for real*
—> bring an internet-connected device to each class
—> take quizzes in studio section
—> work collaboratively in a group
—> 5 assignments (1 individual + 4 group)
—> 1 group project
—> active participation in design critiques
Reading

Conceptual grounding in the literature and practical guidance for implementation

Designing the User Interface: Strategies for Effective Human-Computer Interaction (5th Edition)
Ben Shneiderman & Catherine Plaisant & Maxine Cohen & Steven Jacobs (2016)


Design for Information: An Introduction to the Histories, Theories, and Best Practices Behind Effective Information Visualizations by Isabel Meirelles (2013)

Interactive Data Visualization for the Web by Scott Murray (2013)

Mining the Social Web: Data Mining Facebook, Twitter, LinkedIn, Google+, GitHub, and More Matthew A. Russell (2013)

Readings are listed on website - read before design lecture —> tested by quiz in Friday studio

All readings are available through the UCSD Library -- see the course website for the link
The web environment and development tools are rapidly changing.

One of the important skills programmers and designers increasingly need today is to be able to quickly locate relevant current material on the web.

Selected links to the topics we cover each week will be provided.

Everyone is encouraged to share links to other useful resources they discover in the piazza discussion forum.
Design Lectures

Convey the fundamentals of user interface design for web-based systems, and facilitate the linking between models of human cognition and user interface design

usability for interactive systems
information design
visual design
accessibility
design principles
…and more

Give you hands-on practice with design and prototyping techniques

in-class design activities
Learn to implement some of the discussed design concepts as part of real web-based applications

social media APIs & SDKs (e.g. Facebook, Twitter)
https://developers.facebook.com/ https://dev.twitter.com/
data visualization libraries
http://d3js.org/

Share practical expertise and frameworks for better managing groups, and delivering team programming efforts

project management processes, agile pm processes, agile programming processes
Studio Sections

Help you to be successful & facilitate group work

Review and assistance with topics covered in each week’s lecture
In-class time to work on assignments and group project
Help with design & technical questions
Weekly quiz on reading and lecture content
Assignments

- Five assignments (0,1,2,3,4) allow you to practice the technical content covered in Thursday lecture.
- Assignment 0 is not graded - but is required - basic setup of tools and your programming environment.
- All assignments (except 0) must be solved within your assigned project team.
- For every assignment, we will ask every student to peer-evaluate the effort of the single members of the team.
- Each assignment will be introduced in Thursday tech lecture, with assistance from TAs in Friday Studio.
- Assignments are due Thursday @ noon (week after it is assigned).
- Late turn-in will have a 5 minute grace period, and lose 1 percent of the grade per minute thereafter.
- Assignments will have to be uploaded to heroku and linked through a dedicated Google Form that will be made available by your TA.
Assignments

0. Environment Setup
1. APIs for social media data
2. Data mining, cleaning and processing
3. Information visualization
4. Wireframing and high fidelity prototypes

Assignment 4 will bootstrap your projects and will be the first deliverable for your final project team.

Assignments will be iterative and will build upon each other
Final Project

Design & build an interactive web application using data from the UCSD DELPHI project
http://delphi.ucsd.edu/
Final Project

Apply design & technical learning
Using design principles, programming techniques and technologies learned in lectures and through assignments

Work in agile teams
Practicing agile PM & programming techniques to collaborate on design & programming, leveraging & improving the skills of each team member

Regular (iterative) Progress
Deliverables each week in accordance with milestones to ensure regular progress is being made and feedback can be delivered
Final Project

- Students will be placed in teams of 4-5, with a good balance of skills in programming and design.

- Each team will be supported and coached by a TA, available to them during weekly Studio and office hours.

- Teams will deliver a final report on the implementation, and present their final product during the assigned final exam time for the course during finals week.

- As with group assignments, each team member will be asked to assess the contributions of each member of the team.
Final Project

• The Team Project will be evaluated throughout the course of Phase 2.

• Every week (starting week 5) every team will present a summary of their progress and ask the class for feedback, which will be given during the *design critique*.

• The weekly deliverable will consist of:
  (1) a slide demonstrating progress since last week, focusing on the milestone topic
  (2) summary of collaboration within the group,
  (3) one thing that has been solved over the last week that might benefit the other groups
  (4) four questions they would like classmates to address in giving feedback (*rubric*).

• The weekly deliverable needs to be sent to `cogs121-ta@hci.ucsd.edu` by Monday night (for Tuesday's presentation) or Wednesday night (for Thursday's presentations) by 11:59pm.

• The weekly summaries will be evaluated as v-, v, or v+, and teams will receive a summary of critiques and feedback from the class.

• The weekly evaluations will be integrated with the evaluation of the team's final paper describing the technical implementation of the project.
Design Critiques

How can we scale an intimate design studio experience to a class of 80+ students?

• During Tuesday/Thursday lectures in Weeks 6-10 we will have a combination of lectures on relevant topics + **facilitated design critiques**

• Each project team will deliver a BRIEF (timed!) presentation during the assigned lecture period, demonstrating their progress focusing on the milestone topic for the week (e.g. project idea, data flow, information architecture, visual design)

• During each presentation, everyone in the class will provide realtime feedback to the presenters, guided by the presenter’s **rubric questions**, using the TopHat web application

• Teams will be expected to review all of the feedback they receive through the realtime online discussion.
• Quizzes start on Week2, and we will drop the lowest 2 quiz scores
• Programming assignments will be graded on a scale from 0-10.

Please review the course website for full instructions on grading criteria for each assignment and the projects and for submission instructions.
Communication

Email — UCSD Addresses only
We will use your official UCSD e-mail address, as registered in TritonLink.

Announcements & Discussion — Piazza http://piazza.com/ucsd/spring2016/cogs121
Avoid email… post your questions on Piazza
We will try to maintain a few hour turnaround time on piazza questions. (no guarantees for email!)
Subscribe to these forums so that you automatically receive forum posts as an e-mail.

Official source of information — Course website http://cogs121.ucsd.edu
Assignments, lecture slides, detailed schedule, readings grading policies… etc.

In case of emergency…
If you need to communicate with the Cogs 121 staff please always use the prefix[COGS 121] in your email subjects. There are two distributions lists for this class: Use cogs121@hci.ucsd.edu if you need to reach all the instructors. Use cogs121-ta@hci.ucsd.edu if you need to reach only TA and tutors.
TopHat

A platform that will help us create an active learning environment

• take attendance in each lecture & studio
• take Friday studio quizzes
• give feedback during design critiques
• follow along with lecture on your device, make annotations, etc.
• answer questions during class on your device

$24 dollars for the quarter (but hey you don’t have to purchase textbooks!)

Registration for Tophat should be done by Friday
check Piazza for the “course join code”
CATME

A survey platform that will help us make productive, balanced groups

- answer survey evaluating your skills & time availability
- based on results, instructors will place you into teams of 4-5 members

Expect an email from the system to your UCSD email by Friday. MUST RESPOND BY SUNDAY AT MIDNIGHT.
This week

No Assigned Readings

Thursday Lecture: Project management & being an efficient team + start Assignment 0

Friday Studio: all studios in HSS 1346 - Assignment 0 (no quiz)

TODO

• login to Piazza and set up email notification

• register for Tophat (check Piazza for course join code) (due Friday!)

• respond to CATME group formation survey ASAP upon receipt

• on the waitlist OR missing pre-req OR thinking of dropping? see Amy after class
Dr. Yannis Katsis