Class Activities

Class activities are designed to reinforce the learning of class lecture material. Most activities will provide you with the opportunity to work toward project deliverables. Some tasks will be done individually, others in pairs or as project teams. Deliverables will be identified at the time of the activity. Activity artifacts may be submitted to a named dropbox according to the class schedule as directed by the instructor. They will be graded primarily for the quality and quantity of participation as part of your participation grade. The instructor may refine activities described here as the class progresses.

1. ***Web app practice***

The objective is to learn and practice coding using HTML/CSS/Javascript to build a web app on the node.js backend server environment. You may find React ("a declarative, efficient, and flexible JavaScript library for building user interfaces.") helpful.

2. ***Project proposals: (team)***

Brainstorm ideas for your project application. Prioritize your top three. Review (negotiate) with the instructor to make a final decision on the problem and platform to be used for interactive HCI design.

3. ***System concept paper: (team)***

Write and refine a system concept paper for your target system, as a 100-to-150-word summary. This is a high-level mission statement of the system—a synopsis or "boilerplate" description. Include the name of the system, a description of the kinds of users expected, a brief statement of what users can do with it, and why it's useful (what problems it solves). This is shorter, broader, and less technical than other project deliverables.

4. ***Contextual Inquiry: (team)***

Devise an interview plan. What questions do you want to ask users about the system problem? Pertinent questions: recollection of past usage, how that usage fits into the context of the rest of their lives, at home and outside the home. Look especially for any emotional impact data and look at long-term usage, not just short snapshots of usage.

Your instructor will provide users. Collectively, the class will "interview" them starting with your interview plan list of questions. Introduce your system concept as a starting point.

During the interviews, take raw data notes on paper or a laptop. In anticipation of the later conversion of your raw contextual data into separate work activity notes, keep your raw data notes modular. Use short sentences, each with a single thought or fact or point.

Note: This does not substitute for interviews with your recruited users.

5. ***Contextual Analysis: (team)***

Identify and profile **work roles.** Profile each role in a table to include name, personal characteristics, and abilities. Create an initial big picture system **work flow model diagram**.

6. ***Synthesize Work Activity Notes: (team)***

The whole team works together as an analysis team to synthesize work activity notes. Review the raw contextual data. Each previous interviewer and note taker should lead a quick review of their data. Previous interviewees add their insights and perspectives. Retell stories and events. Write your work activity notes directly onto Post-it notes. Be careful to protect the sticky part so it will stick to the wall later.

Paraphrase and synthesize, instead of quoting raw data verbatim. Make each work activity note a simple declarative point. Filter out all noise and fluff. Make each work activity note understood at a glance. Be brief; write each note in one to three succinct sentences. Each note should contain just one concept, idea, or fact. Break a long work activity note into shorter ones. Disambiguate pronouns, references to context.

7. ***Build a WAAD: (team)***

Materials we will provide

- One pad of Post-it™ notes (3" X 3") for each student
- Paper for posting
- Tape

What to do

After you have your work activity notes, build a limited work activity affinity diagram from work activity notes. Start by each team member grabbing a few work activity notes on Post-its. Start by taking turns in introducing a work activity note to the team, reading it and entertaining brief discussion, if needed.

Then post the note on the working space. If there is a related note or notes already posted, post this note next to it, so that the physical proximity represents affinity. In this way you will grow affinity clusters as you work. As the clusters become well-formed, start labeling them with temporary topic labels. Use a cluster label to capture the gestalt of the cluster, so no one has to read the notes again.

Everyone on the team looks through their notes for others that relate to existing clusters.
After this runs its course, start new clusters in the same way. As clusters expand, if their scope grows, modify the cluster label accordingly. At some point you can break off and everyone starts posting in parallel, asking for discussion when needed. Clusters graduate into real groups.
When you see groups that are related, create groups of groups and label accordingly.
If there is time, we'll have your team report to the class about your WAAD-building process and any difficulties.

8. Requirements: (individual then team)

Remember that "requirements" are interaction design requirements. This activity must be done in a very limited time. Do a walkthrough of your work activity affinity diagram and any additional work activity notes.

Select **10-12** different, interesting, and representative work activity notes (in the WAAD or not). Extract some interaction design requirements from these selected work activity notes by deducing the requirement(s) implied. Write them as somewhat formal requirements statements using the template discussed in the class lecture.

9. Modeling: (team)

Models turn contextual data into actionable items as design ideas. The models are not designs but elements to consider or take into account in design.

Go through your WAAD and any other work activity notes and:

- Review and refine as necessary the major user **work roles and profiles,** and machine roles (e.g., central database) in the work domain.
- Review and refine the work **flow model**. To review, the work flow model is a "big picture" diagram of work domain and the entire work practice. It shows interconnections among components of the work domain, work flow, information flow, and all communications among the components. Include non-human entities, such as a central database and non-computer communication flow such as via email, telephone.
- Make a **social model diagram**. Identify active entities and represent as nodes. Show norms of behavior, concerns of individuals in specific work roles, influences, feelings, and environmental factors.
- For one of the work roles model **one** usage scenario as a **hierarchical task analysis** (HTA) model.

10. Persona (individual then team)

Construct a persona for one of your work roles. See if you can define and apply some behavioral variables. Write up a personalized description starting with an appropriate name.

11. Conceptual Design - ideation, sketching, and storyboarding: (individual, then team)

Take on the role of UX designer and create a new design vision. Here you are totally focused on the user experience. What emotional impact do you want to achieve?

- Engage in ideation, to rapidly create and compare a large number of design alternatives.
- Start by discussing the goals and how you expect to proceed.
- What mental models and metaphors are relevant?
- Everyone in turn, start throwing out ideas for discussion.
- Create a storyboard of at least one work flow for a work role in the work environment.

- Make sketches simultaneously (each individual) and hang them on the wall. Remember that a sketch is not just a picture; it's a conversation.
- Remember to keep separate idea creation and critiquing.
- In the idea creation phase, keep the rich ideas flowing. No idea is too far out.
- When that well starts running dry, switch to critiquing and evaluate the ideas, winnowing out the most promising ones.

12. Intermediate Design (team)

Select a design concept. Create an intermediate design wireframe in preparation for the cognitive walkthrough.

13. Cognitive Walkthrough (team)

The team will perform a cognitive walkthrough of the initial design sketch of another team as directed by the instructor.

14. Design Guidelines (individual then team)

Consider the feedback from the cognitive walkthrough. Refine and extend your project design by systematically applying the execution and evaluation design principles and guidelines. Document the design principles/guidelines used or not used and your design thinking. Perhaps your design already adheres to some of the principles/guidelines, if so note that.

15. Heuristic Evaluation (team)

Perform a heuristic evaluation of your detailed design.

16. Test Plan – Measurements (pairs)

Define quantitative and qualitative test measures and apply them to user testing of the application designated by the instructor.

17. Quantitative Data Analysis (individual)

Complete the quantitative data analysis exercise and submit to the dropbox "Quantitative Data Analysis".

18. Color, icons, text, grouping (team)

Evaluate your project's use of color, icons, text, and grouping. What design refinements are merited?

19. Universal Usability (team)

Evaluate your project's accommodation for universal usability. For your target population of work roles what disabilities need to be especially accommodated? How does your design accommodate them?

20. Design Practice (individual)

TBA