DSID 131 Fundamentals of Interface Design
Fall 2007 Course Syllabus

Time: Mon & Wed 7 – 10p
Location: Art Building 206
Website: http://www.designbyfire.com/sjsu

Instructors

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Office hours to be held immediately after class by appointment only. Appointments can be made by email or phone call.

Overview

Interfaces serve as the medium, or a communicative layer, through which people engage with some underlying technology, such as a computing system. Leveraging timeless principles of graphic and product design, as well understanding the issues inherent to the digital domain, designers can create interfaces that enable a smooth, transparent way for people to purchase books online, write a term paper, chat with a friend, listen to music, or play games—in other words, the basic activities of living.

This course covers basic concepts and issues pertaining to the design of interfaces for digital products, applicable to a range of contexts: web, mobile, desktop, and beyond. As an ID studio elective, special emphasis is on the design of interfaces that involve physical elements (e.g. appliances, consumer devices, etc.) rather than websites. The ultimate objective in the design of a product is to fulfill its user's goals and expectations. The seamless integration of its physical and virtual properties is one step towards achieving this objective.

Being a studio course, interface design topics will be taught via hands-on individual and group projects interspersed with case studies and core principles relevant to that stage in the semester or project. Active student participation is required to reap the benefits of the course, and to enable the course to be a success. A basic assumption is that you are curious or fascinated by the interfaces that populate our daily lives, and wish to learn more about how they are made, how to improve them, and how they can better impact one's quality of life. In particular, this course should be of interest to ID students as products take on increasingly digital qualities, including embedded screens, touch-based interactions, and so forth.

***Note**:* This class is *not* a tool workshop (i.e., Photoshop, Flash, or Dreamweaver) although such tools may be used for completing assignments as needed. Nor is this a class for "making a website". Instead this class leverages industry expertise and core principles to help illuminate, clarify, and educate about the problems inherent to interface design, geared to an ID audience.

Requirements

Undergraduates: BS Industrial Design or BS Graphic Design Majors, DSID 126.
Graduates: Enrolled in Human Factors-Ergonomics Masters program.

It is assumed that you are familiar with Industrial Design process and techniques, as these will be referred to on a regular basis. It is up to you to seek help from the instructors or other classmates if this is not the case. It is also assumed that you have basic knowledge of the following:

Some drawing/image editing software (Photoshop, or Illustrator, or Fireworks, etc.)

AND

Some presentation software (PowerPoint, or Keynote, etc.).

AND

Pen and paper to draw boxes and sketches.

If you know how to make interactive mockups in HTML, great! But that is not a requirement.
If you know how to make Flash demos, awesome! But that is not a requirement.
No programming or scripting knowledge is needed.

Topics and Content

As the title says, this is a fundamentals course focused on the core ideas and problems that define the practice of designing *interfaces*. These elements form a sound basis to build upon with later advanced ID courses. Those coming from non-ID background should also see benefits for their fields and coursework, as well.

We will start by describing this activity called "interface design", and how it leverages much of what is found in traditional non-digital design fields. The instructors' take on interface design is that it is the basis of what can be termed as "digital product design": creating hi-tech products whose features and functions are expressed to a user so as to be useful, usable, desirable and thus, valuable for the user's context and goals. Regardless of the label, the following topics are most relevant: *User mental models, metaphors, terminology, use cases & tasks, organizing information, using type & color to emphasize, designing for time & motion, direct manipulation and feedback, on-screen complexity, and simplifying interfaces.*

We will also have lectures on short topics like *persuasive design*, *beauty & aesthetics*, and *prototyping*, as well as guest speakers from Silicon Valley companies to discuss from their POV the practical issues confronted in the business world. (Guest speaker topics and dates will be announced ahead of time but are subject to change due to work schedules.)

This is a *design* studio, thus research methods and usability testing, while important, will play a less vital role. Instead, we'll be focusing on aspects of the design process as a way to creatively solve complex yet typical interface problems. Those who have had coursework in research techniques are welcome to use them in this class if appropriate.

Ultimately, the course content revolves around these assumptions about design:

- Design is a form of thinking and problem solving
- Design is about effective, clear, meaningful communication
- Design requires multiple iterations and fast failures to learn how to improve the solution
- Design is a collaborative process that requires multiple people to share and critique

Course Objectives

By the end of this class, you should:

- Understand what interface design entails as a profession and activity
- Understand the role of interface design in hi-tech product development
- Understand the kinds of problems interface designers tackle
- Understand the core principles for achieving good, effective interface design
- Demonstrate these principles for a class project
- Know how to evaluate and critique an interface

Assignments

To illustrate the ideas, assignments will be given for each topic, requiring students to **make** something: a sketch, a demo, or set of written behaviors. The assignments are framed as part of a larger semester-length project to be described in detail in class. Each assignment is an opportunity for you to try out the concepts and get a feel for the problems designers deal with, but in a tightly scoped fashion so as to learn specific lessons.

Assignments **must** be completed on time and must demonstrate a good faith effort given your background or skillset. What's important is *not* how sexy or revolutionary your proposed solution is but rather how effectively you understood the concept and attempted to solve a problem, applying the principles discussed in class, and the verbal articulation (to your peers or instructors) afterwards about the pros and cons.

Schedule *(subject to change as the term progresses…)*

Week 1

Mon Aug 27
Intro: What is this course about? Overview of concepts.
Description of project and first assignment.
Assignment: Evaluate a given interface in your own words (1 page)

Wed Aug 29
What is a pixel? Short talk on prototyping. Discuss assignment results. Split up into teams.
Brainstorm project content and functionality.

Week 2

Mon Sep 3
LABOR DAY | NO CLASS

Wed Sep 5
Read : *Good Design in the Digital Age* by Richard Buchanan
And *Design as Communication* by Don Norman
Short topic: Persuasive design

Week 3

Mon Sep 10
Read: *Affordances and Design* by Don Norman
Mental models and UI metaphors
Assignment: Develop a mental model

Wed Sep 12
Review assignment / Work session

Week 4

Mon Sep 17 — Taskflow, activity, and context
Assignment: Create use cases

Wed Sep 19 — Review assignment / Work session

Week 5

Mon Sep 24 — Terminology: labels, names, documentation
Assignment: Create a glossary

Wed Sep 26 — Review assignment / Work session

Week 6

Mon Oct 1 — Structure: grids, layouts, wireframes
Assignment: Create wireframes or box layouts

Wed Oct 3 — Review assignment / Work session

Week 7

Mon Oct 8 — **Read:** *Typography and the User Interface* by Daniel Kuo
Typography: clarity, meaning, and emphasis
Assignment: Create a spec sheet

Wed Oct 10 — Review assignment / Work session

Week 8

Mon Oct 15 — Color: emotion, emphasis, RGB vs. CMYK, Additive/Subtractive
Assignment: Create a spec sheet

Wed Oct 17
(ICSID in SF) — Review assignment / Work session

Week 9

Mon Oct 22 — Direct manipulation: designing behavior and interactions
Assignment: Write behavior notes

Wed Oct 24 **Read:** *What Does Rich Mean for User Experience?*
Short topic: Aesthetics and beauty of interfaces
Review assignment / Work session

Week 10

Mon Oct 29 Time and motion: animation, transitions, visual cues
Assignment: Prototype a motion-oriented design

Wed Oct 31 (Halloween) Review assignment / Work session

Week 11

Mon Nov 5 Complexity in the interface/Flattening
Assignment: TBD

Wed Nov 7 Review assignment / Work session

Week 12

Mon Nov 12 VETERAN'S DAY | NO CLASS

Wed Nov 14 Catch-up day

Week 13

Mon Nov 19 Catch-up day

Wed Nov 21 THANKSGIVING BREAK | NO CLASS

Week 14

Mon Nov 26 Short topic: branding the interface (tentatively)
Work session/final project

Wed Nov 28 Guest talk: professional practice
Work session/final project

Week 15

Mon Dec 3 Guest talk: professional practice
Work session/final project

Wed Dec 5 Work session/final project

Week 16

Mon Dec 10 LAST DAY
Course recap, future of UI, what's next…
Work session, check final project progress

Wed Dec 12 FINAL PROJECT CRITIQUE (details TBD)

Grading

First of all, it is vital to the success of the course (and your benefit) for all students to show up well-prepared, with all necessary files/print-outs ready for on-screen display or posting on the wall for critiques and discussion.

Active participation is necessary! This is a discussion/studio course whereby your questions and comments help your peers (including the instructors) learn about the subject even more. This holds true particularly during critiques. Indeed, one of the best ways to learn about interface design is to critically examine others' work, especially your own. Everyone will be strongly encouraged to speak up.

Frequent absences or just a lack of involvement in class activities will be equated with a lack of involvement and little understanding of the course goals, objectives and lessons. Frequent late arrivals are disruptive and inconsiderate to the rest of the class and will adversely affect your grade. If you encounter any problems that inhibit your ability to attend class please provide as much advance notice as possible by contacting the instructors.

Finally, all students are strongly urged to let either instructor know of any confusion or problem understanding the course content early in the semester. Please do not wait till the end of the term! The content is deliberately organized in a step-wise fashion so later concepts build upon earlier ones (including the assignments) so falling behind can be very risky if not addressed early on. **Do not wait until the end of the semester to discuss problems you are having in class or with your grades!**

Grade makeup:

- **Participation** 25%
- **Assignments** 50%
- **Final Project** 25%

Grading criteria:

- **Quality:** The quality of your work will be determined by your ability to translate the principles conveyed in class into successful deliverables throughout the course duration. Quality takes into consideration your ability to consistently deliver high quality work successfully supported by useful and convincing information.
- **Effort:** Your effort will be assessed by the amount of energy and enthusiasm you apply towards this class. Although much of your effort will be determined by the amount and quality of work that you produce; it will also be evaluated by participation in class and class activities.
- **Completeness:** Finally, you will be evaluated by the completeness of your work for this course. This simply means, did you produce all that was required and deliver them at the proper deadlines.

All assignments must be submitted for grading at the date and time specified by the instructor. Late work will not be accepted unless there is a valid reason agreed upon in advance. Failure to meet deliverables will result in reduction of the grade for that phase.

Readings

There is no required textbook for this course. Any handouts will be provided as warranted for a class session. Readings for a class date are online at specified URL's. All lecture slides will be made available online as well.

Readings for Wed Sep 5:

http://id.bobulate.com/readings/gooddesign.pdf

http://www.jnd.org/dn.mss/design_as_communicat.html

Readings for Mon Sep 10:

http://www.jnd.org/dn.mss/affordances_and.html

Readings for Mon Oct 8:

http://www.cooper.com/insights/journal_of_design/articles/typography_and_the_user_interf.html

Readings for Wed Oct 24:

http://www.boxesandarrows.com/view/what-does-rich-mean

In addition, the following books are highly suggested for those who seek a deeper understanding of the issues and various perspectives on interface design.

Designing Visual Interfaces: Communication-Oriented Techniques
by Kevin Mullet and Darrell Sano

The Design of Everyday Things
by Donald A. Norman

About Face 2.0: The Essentials of Interaction Design
by Alan Cooper and Robert Reimann

Envisioning Information
by Edward R. Tufte

Designing Interfaces: Patterns for Effective Interaction Design
by Jenifer Tidwell

Designing for People
by Henry Dreyfuss

The Elements of Friendly Software Design
by Paul Heckel

A Designer's Art
by Paul Rand

An evolving list of articles, books, sites, and organizations about interface, interaction, and experience design can be found here: www.udanium.com/design_resources.html