

SYLLABUS I300 FALL 2009 **VERSION 1.4** SECTION 4434 (27287, 27288, 27289)

Foundations of Human-Computer Interaction Design

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Images:

Left – Glycine Airman Special II No. 48 Automatic Winding Mechanical Watch (source: E. Blevis).

Right – Phosphor E Ink Digital Watch (source: <http://www.watchismo.com/phosphor-dh01-watch-digital-hour-clock.aspx> @ 9.23.09)

Introduction

This course helps you build competence in the foundations of Human-Computer Interaction Design (HCI/D). The field of Human-Computer Interaction (HCI) has origins primarily in computer science and cognitive psychology. Nowadays, it also exists in a confluence with design as a discipline that owes to traditions of art, architecture, product design, and communications design. There is an extensive literature about HCI and much of it is collected in the HCI Bibliography (<http://hcibib.org/>) and the Association for Computing Machinery (ACM) digital library (<http://portal.acm.org/dl.cfm>). This course takes a very design-oriented perspective on HCI/d.

Textbook

The textbook for the course is:

Hoekman, Robert Jr. (2007). *Designing the Obvious: A Common Sense Approach to Web Application Design*. Berkeley, CA USA: New Riders.

The textbook is a complement to some of the material in the course. The course does not strictly follow this text. It is an easy text and you will be required to read it in its entirety. It will help you with the course assignments, but reading it in-and-of-itself will not enable you to pass the course.

Structure

The structure of this class is different from others you may have taken. You will be asked to complete a weekly assignment in the form of a design challenge. As there are 14 substantive weeks in the course, there are 14 design challenges. Expect each design challenge assignment to take about 3 hours to complete, as a rough guide.

There are no exams in this class.

The design challenges are of two sorts, namely (i) design research projects which require you to find and critique existing designs or otherwise understand the motivations and behaviors of people, and (ii) design concept projects which require you to use the design research you have undertaken to create conceptual designs that delight and elevate people and life.

Design Challenge Themes

There are seven themes that form the content for a paired design research project and design concept project as shown in the schedule that appears later in this document. As an initial working notion of design challenges, this year's themes are:

- Time Keeping & Time Telling Systems
- Comfort & Climate Control Systems
- Music Enjoyment & Music Discovery Systems
- Sustainability & Personal Carbon Calculator Systems
- Travel & Travel Memories Preservation Systems
- Food & Food Advisor Systems
- Imagery & Image Sharing Systems

Details of how to interpret these themes will be provided in Tuesday classes. **I reserve the right to and very likely will substitute some of these themes with some others during the course of the semester, in order to tailor the assignments based on particular class interests and class experience in practice.** This is the first time I am structuring the class this way, and some adaptation and variation from what is in this syllabus is inevitable. Some of the alternative themes we might take up include: Diversity & Community Awareness Systems, Wayshowing & Digital Signage Systems, Mobility & Mobile Applications Systems, ...

Tuesdays

On Tuesdays, we will meet all together in WH 120 as section 4434 with the following regular Agenda under normal circumstances:

- 11:15-11:25 Introduction
- 11:25-12:10 Final Round Critique Competition for the preceding week's design challenge
- 12:10-12:30 Foundational background & new design challenge assignment details

Completed assignments are due on or before the start of class on Tuesdays. Late assignments will not be accepted except in strict accordance with University policies. Assignments will be posted on Oncourse late on Tuesdays, after they have been described in class.

Thursdays

On Thursdays, you will meet in your practice section with your assigned Associate Instructors who will:

1. Take up the textbook chapter (where indicated in the schedule),
2. Engage in discussion about the weekly design challenge assignment, and
3. Select 3 section representatives for the Final Round Critique Competition on the following Tuesday using a merit based process that will be explained in class (The number of representatives will be adjusted to be proportional to the size of the practice sections if there is uneven enrollment)

The practice sections are:

27287 11:15A-12:30P R OP 105

27288 11:15A-12:30P R LI 031
 27289 11:15A-12:30P R BU 102

Grading

There are 14 Design Challenge assignments organized in 7 themes and each assignment counts for 25 points for a grand total of 350 points.

14 assignments * 25 points = 350 points

Attendance is critical to this type of course structure, especially since there is no exam. There are 50 points allotted for attendance. You are allowed exactly one absence without penalty. Otherwise, you will lose 10 points for each absence unexcused by University policies:

Number of Absences	Points
0 or 1	50
2	40
3	30
4	20
5	10
More than 5	0

The total number of possible points awarded during the class is 400, which will be divided by 4 to yield the following grades:

Grade	Points / 4
A+	97-100
A	94-96
A-	90-93
B+	87-89
B	84-86
B-	80-83
C+	77-79
C	74-76
C-	70-73
D+	65-69
D	60-64
D-	50-59
F	0-49

Bonus Grades

If you are selected in your practice section to participate in the Final Round Critique Competition you will receive **4 bonus** points.

If your design is attributed prominently by someone who is selected to participate in the Final Round Critique Competition, you will receive **4 bonus** points. As a practical matter, the number of attributions identified as prominent ones should not exceed 4. You can and should reference more than 4 others if appropriate, as appropriate.

If you win the Final Round Critique Competition for the week, **your final grade will be your grade plus a 1/3rd** (i.e. a "B" becomes a "B+", ...) There will be 14 such winners—one in each week in which an assignment is due. **Also, everyone in your section who attended the prior Thursday will receive 1 bonus point.**

There is a maximum of 5 bonus points per student per Tuesday session—4 bonus points for being selected to participate or being prominently attributed, and 1 bonus point for being in the section that puts forward the winning design research or concept project.

Because of the bonus grades, it will be theoretically possible to obtain a score greater than 400 points. A score greater than 400 points will count as 400 points for the purposes of calculating the reported grade.

Schedule

Week	Dates	Comment	Design Research Theme & Assignment	Design Concept Theme & Assignment	Text Chapter
1	SEP 01 SEP 03		Time Keeping		
2	SEP 09 SEP 10			Time Telling	1
3	SEP 15 SEP 17		Comfortable Spaces		2
4	SEP 22 SEP 25			Comfort Control Systems	3
5	SEP 29 OCT 01		Diversity		
6	OCT 06 OCT 08			Social Inclusion Systems	4
7	OCT 13 OCT 15		Music		5
8	OCT 20 OCT 22			Music Culture & Discovery Systems	6
9	OCT 27 OCT 29		Sustainability		
10	NOV 03 NOV 05			Futuring	7
11	NOV 10 NOV 12		Representations of Self		8
12	NOV 17 NOV 19			Professional Presence	9
13	NOV 24	Thanksgiving	NO CLASS		
14	DEC 01 DEC 03			Final Competition Erik Stolterman, Judge	
	DEC 08 DEC 10	Free Week	OPTIONAL CLASS to reflect and share thoughts about the future		
15	DEC 15 DEC 17	Final Exam Week	NO EXAM		

Doing Your Own Work and Sharing and Attributing Others

In this class, your assignments are individual. However, you are welcome to work in groups with others and encouraged to share your ideas with others. In the real world, it is important to build on the work of others. When you present or submit your work, you need to be prepared to give an account of what part of a design concept or research is your own work and which part was inspired or informed by the work of others. You must properly attribute the work of others.

If you work with others and share ideas and properly attribute the contributions of others and are clear and truthful about the way you have added value and conducted your own synthesis, you will tend to be rewarded with better grade evaluations. **The grading system is designed to promote sharing and attribution, by means of the Bonus Grades described above.**

On the other hand, if you use the work of others without attribution and acknowledgement, you will be subject to academic sanctions concerning plagiarism with all deliberate intent. **Acts of plagiarism—using the work of others without attribution or reusing your own work without attributing prior use—will be subject to a zero-tolerance policy in this class.** If you believe that someone else in the class has used your work without attributing you, please talk to the instructor or one of the AIs.

Digital Photography & Other Tools

At the time I write this, IU has worked out a special licensing arrangement with Adobe and students can now download Adobe software from <http://iuware.iu.edu> using your student IU login for your own educational use. **NEW: You can also access <http://lynda.com> from <http://iuware.iu.edu>, which provides instruction for how to use Adobe tools.** There are a lot of Adobe software tools worth mastering, but especially Photoshop CS4 Extended, Acrobat 9 Pro, Illustrator CS4, Flash CS4 Professional, and Dreamweaver CS4 are useful tools for doing the assignments in this course. Also of interest may be: Adobe Photoshop Elements, Photoshop Lightroom, and Premiere Elements. You will also want to master either Microsoft PowerPoint (available from iuware) or Apple Keynote (<http://www.apple.com/iwork/keynote/>). You are expected to learn these tools on your own using the instructions that come with the software or any of the myriad of self-tutor books on the topics, but this class is an opportunity to learn-by-doing in practicing your use of these tools.

You will also want to have a digital camera, since use of imagery to express your design ideas or conduct observational design research is particularly germane to this course. I will attempt to include as much content about how to improve your digital image making in this course as I possibly can. In general, any digital camera will do for our purposes. If you are ambitious about digital photography within and beyond the scope of this class, I recommend you purchase a camera with reasonable manual control capabilities and wide angle lens capabilities. These are—roughly in order: Leica D-Lux 4, Olympus PEN E-P1, Canon PowerShot G11 or G10, Ricoh GR Digital III or II, Panasonic Lumix DMC-LX3, Sigma DP1, and there are others. Some of these manufacturers have student discount purchase programs. These are all compact cameras. I do **not** recommend buying a DSLR—the cameras I list are preferable for our purposes. More important than which camera you have, you should acquire and use a decent tabletop tripod and hotshoe mount spirit level.

Contact Information

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Office Hours

By appointment. Send an email to the Instructor or an Associate Instructor to make an Appointment. In general, you should try to seek help or assistance from the AIs first, before contacting the Instructor. However, my door is open to you.

Accommodations & Feedback

We welcome your feedback. We will do our best to accommodate specific requests if they are reasonable and have merit.

Academic Misconduct

The class is morally and procedurally bound by IU's policies on academic misconduct, the details of which you can read about at the following website: http://www.dsa.indiana.edu/Code/Part_2all.html

Religious Observance

In accordance with the Office of the Dean of Faculties, any student who wishes to receive an excused absence from class must submit a request form available from the Dean of Faculties for each day to be absent. This form must be presented to the course professor by the end of the second week of the semester. A separate form must be submitted for each day. The form must be signed by the instructor, with a copy retained by instructor, and the original returned to the student. Information about the policy on religious observance can be found here:

<http://www.indiana.edu/~vpfaa/holidays.shtml>

English

If English is not your native language or you are otherwise shy about speaking in class, please do not worry. You will not be penalized in any way for making contributions to the class in less than perfect English or for taking time to compose your answers. You are welcome to say what you want to say in your language of choice first and then ask for help from others to translate to English. I will frequently emphasize to the class the need for all of us to be supportive of each other when it comes to contributing to the discussions. There is no need to feel rushed when responding to questions in class—an important part of the class is the construction of a feeling of community with the faculty and your peers.

Laptops

In order to encourage you to read on screen, rather than print the resources out on paper, you will be permitted to use laptops in class. The expectation is that you will use the laptops to look up things that are relevant to class. Please do not use the laptops to do things that are not related to the class. If the AIs or the instructor notices that you are doing things on your laptop unrelated to the class, you may lose your attendance point for that day.

Attributing I300

This course, I300, is an evolving curriculum design based on years of experience and course development from the School of Informatics' HCI Design faculty and graduate students: Professors Jeff Bardzell, Shaowen Bardzell, Eli Blevis, Marty Siegel, and Erik Stolterman; and graduate students Kevin Makice and Will Ryan.