

Syllabus

INLS 718 User Interface Design (3 credits), Fall 2018

Instructor: Fei Yu (feifei@unc.edu)

Class Schedule: Tuesdays 5:45 to 8:30 PM; Manning 208

Office Hours: By appointment; Manning #305 or HSL #551

Prerequisites:

INLS582, System Analysis; INLS382, Information Systems Analysis and Design; or permission of instructor

Course Description

This course introduces fundamental design principles relevant to the design of the human interface to computer-mediated information systems. The major topics to be discussed include universal design principles, user research methods, the characteristics of tasks supported by information systems, user interface design process, and methods for evaluating an interface design.

This course is designed to prepare students to participate in the design of information system interfaces. Its content is dependent on prior knowledge gained in System Analysis (INLS582 or 382), which focuses on analyzing and designing the functions that systems perform. INLS718 also introduce students to the methods used in the evaluation of system interfaces. This course is a prerequisite for INLS818, Seminar in Human-Computer Interaction.

This course is not a programming class although UI/UX designers usually work closely with software engineers or application developers; this is not a graphic design class either although graphic design tools and skills can facilitate the prototyping process.

Textbooks:

1. Lidwell, W., Holden, K., Butler, J., & Elam, K. (2010). **Universal principles of design: 125 Ways to enhance usability, influence perception, increase appeal, make better design decisions, and teach through design.** Beverly, Mass: Rockport Publishers.
2. Krug, S. (2014). **Don't make me think, revisited: A common sense approach to Web usability.** Indianapolis: New Riders
3. Sharps, H., Rogers, Y., & Preece, J. (2015). **Interaction design: Beyond human-computer interaction.** Chichester: John Wiley.
4. Miller, L. (2015). **The practitioner's guide to user experience design.** New York: Grand Central Publishing.

	Class Date	Topics	Assignment	Reading	Universal Design Principle
1	Aug. 21	Introduction: user Interaction & user experience Guest speaker (Lynn Eades from UNC HSL)	H1	Sharps, H. (Ch 1, 6)	
					80/20 Rule
					Advance Organizer
					Convergence
					Depth of Processing
					Design by Committee
					Development Cycle
					Flexibility-Usability Tradeoff
					Iteration
					Life Cycle
					Modularity
					Most advanced Yet Acceptable
					Not invented here
					Anthropomorphic Form
					Attractiveness Bias
					Baby-Face Bias
					Contour Bias
					Horror Vacui
					Inattentional Blindness
					Interference Effects
					Most Average Facial Appearance effect
					Orientation Sensitivity
					Uncanny Valley
					Visibility
					Waist-to-Hip Ratio
					Archetypes
4	Sept. 11	Psychology & human factors User data analysis & communication		Lidwell, W.; Sharps, H. (Ch3, 8)	Classical Conditioning Cognitive Dissonance

		Guest Speaker (Kate Moran from the Nielsen Norman Group)			<ul style="list-style-type: none"> Cost-Benefit Defensible Space Face-ism Ratio Fibonacci Sequence Hierarchy of Needs Iconic Representation Similarity Stickiness Storytelling
5	Sept. 18	<ul style="list-style-type: none"> Conceptual model & mental model Group-led design/paper discussion 	H2 due	<ul style="list-style-type: none"> Lidwell, W.; Sharps, H. (Ch2); Krug, S. (Ch 1-4) 	<ul style="list-style-type: none"> Figure-Ground relationship Highlighting Hunter-Nurturer fixations Legibility Mapping Mental model Mimicry Performance load Personas Rosetta Stone Three-Dimensional Projection Top-Down Lighting bias
6	Sept. 25	<ul style="list-style-type: none"> User task descriptions (scenarios, use cases, & task analysis) Guest Speaker (Brian ARVR) 	H3	<ul style="list-style-type: none"> Lidwell, W.; Miller, L. (Ch 2) Sharps, H. (Ch10) 	<ul style="list-style-type: none"> Biophilia effect Cathedral effect Closure Errors Factor of Safety Forgiveness

					<ul style="list-style-type: none"> Form Follows Function Garbage In-Garbage Out Immersion Priming Readability Red Effect
					<ul style="list-style-type: none"> Comparison Desire Line Fitts' Law Golden Ratio Hick's Law Hierarchy of Needs Pictures Superiority Effect Rule of Thirds Satisficing Storytelling Structural Forms Symmetry
7	Oct. 2	<p>Documenting user tasks</p> <p>Guest Speaker (Ryan Tyler & Art Swanson from Optum)</p>		Lidwell, W.; Krug, S. (Ch 6-7)	
					<ul style="list-style-type: none"> Chunking Expectation Effect Exposure Effect Five Hat Racks Framing Hierarchy Inverted Pyramid Layering Progressive Disclosure
8	Oct. 9	<p>Information architecture</p> <p>Group-led design/paper discussion</p>	H4 H3 due	Lidwell, W.; Krug, S. (Ch 6-7)	

				Propositional Density
				Scarcity
				Wayfinding
9	Oct. 16	No class (mid-term evaluation & reading assignment)	Lidwell, W.; Miller, L. (Ch 3)	
				Accessibility
				Aesthetic-Usability effect
				Affordance
				Alignment
				Area Alignment
10	Oct. 23	Developing and documenting the design Group-led design/paper discussion	Lidwell, W.; Miller, L. (Ch 3)	Color
				Confirmation
				Constancy
				Control
				Entry point
				Good continuation
				Proximity
				Archetypes
				Common Fate
				Gutenberg Diagram
			Lidwell, W.; Miller, L. (Ch 3); Sharps, H. (Ch11-12)	Iteration
11	Oct. 30	Prototyping and tools Guest speaker (UNC CHAI CORE)		Normal distribution
				Ockham's Razor
				Operant Conditioning
				Prototyping
				Self-Similarity
				Symmetry

					Uniform Connectedness
					Visuospatial Resonance
12	Nov. 6	No class (out for conference)	H5 H4 due	Lidwell, W.; Miller, L. (Ch 4) Krug, S. (Ch 8-9)	
13	Nov. 13	Usability & evaluation methods Group-led design/paper discussion		Lidwell, W.; Miller, L. (Ch 4) Sharps, H. (Ch13-14)	Confirmation Consistency Feedback Loop Freeze-Flight-Fight-forfeit Law of Pragnanz Most Advanced Yet Acceptable Nudge Performance Versus Preferece Recognition Over Recall Signal-to-Noise Ratio Uncertainty principle Weakest link
14	Nov. 20	Usability testing case study Guest Speaker (Dr. Janey Barnes from user-view Inc.)		Lidwell, W.; Sharps, H. (Ch13, 15)	Constraint Mnemonic Device Redundancy Savanna Preference Scaling Fallacy Serial Position Effects Shaping

Threat Detection

Uncertainty Principle

Von Restorff Effect

Wabi-sabi

Weakest Link

15 Nov. 27 No class (usability testing for class project)

16 Dec. 5 Special topics H5 due Krug, S. (Ch 10-13)
Class Project Presentation

Dec. 12 No class Final Deliverable due

Course Requirement

Requirement	% of total grade
Attendance	10%
Class participation	
• Group-led design critique or paper discussion	10%
• Student presentation on design principles	30%
Assignments	30%
Class project & presentation	20%

Grading

Undergraduate Students		Graduate Students	
Grade	Range	Grade	Range
A	90-100	H	95-100
B	80-89	P	80-94
C	70-79	L	70-79
D	60-69	F	69 or below
F	59 or below		

Absence

This is a once-a-week class and a lot of materials are packed into each session. If you miss a session, you will miss a lot. If you have more than 2 absences (or any unexcused absences), your attendance and participation grade will decrease by 25% for every subsequent absence.

Writing Skills and Citation Information

Strong written communication skills are critical in both academia and the workplace. Your responses to assignments must be well-organized, clear, concise, free from grammatical errors, original, and corrected cited. Students who have questions about their writing, or who want to improve their writing are encouraged to contact the Writing Center (<http://writingcenter.unc.edu/>) which has many excellent resources to help you with your writing.

I do not require a single specific style of citation, although you are welcome to use an established citation style like Chicago or APA. My **main priority** is that I am able to access the same resources that you used based on the citation you provided. This means providing the unique identifiers of your source, which include:

- Author (this can be an individual or an organization such as Kaiser Family Foundation).
- Year of publication.
- Title of publication.
- If you accessed the resource online:
 - Date of access (the date that you viewed the website).
 - A link to the resource.
- If you are referencing a journal article, in addition to the online citation, please also include the journal name, volume, pages, etc.

Put your full references at the end of your document, and some short unique identifier (either author, year or a number) after the part of your writing that is being cited. For example, if I were citing the Kaiser Overview of Health Reform, in the text I would write:

Most U.S. citizens are now required to have some form of health insurance coverage (Kaiser Family Foundation, 2010)

Or I could also write:

Most U.S. citizens are now required to have some form of health insurance coverage (1).

Then, at the end of my answer, I would put (with any other references that I had used):

1.) Kaiser Family Foundation. (2010). *Overview of Health Reform*. Retrieved May 13, 2013 from <http://www.kff.org/healthreform/8061.cfm>

Don't worry too much about the details of the citation format beyond what I mentioned here. The priority is just to get you in the habit of citing your sources. Many fields and departments have a specific

citation format that they prefer, and you can use this to practice, or plan to learn it later when it becomes necessary.

Due Dates and Late Work

The homework assignments are normally due on Tuesdays before 5:45 PM. A late penalty of 10% per day will be applied unless prior arrangements have been made with the instructor. Students are highly encouraged to submit their homework even if it is late.

Sakai

We will use Sakai for Course Materials and Homework Assignments, and the Class Project Deliverable. It is the responsibility of each student to make sure they have access to Sakai and can submit assignments when they are due. If for some reason you are unable to submit an assignment to SaKai, you may email it to me along with a note about the problem you encountered.

Honor Code

Faculty and students at the University of North Carolina at Chapel Hill adhere to their Code of Student Conduct. Accordingly, you all should recognize that most software applications available in the computer lab are copyrighted and cannot be copied. We can learn much from each other and we will do that. I expect each of you to help each other. We'll discuss what we expect in terms of cooperative, collaborative, shared work and the honor code.

The code of student conduct

It shall be the responsibility of every student at The University of North Carolina at Chapel Hill to obey and support the enforcement of the Honor Code, which prohibits lying, cheating, or stealing when these actions involve academic processes or University, student or academic personnel acting in an official capacity.

It shall be the further responsibility of every student to abide by the Campus Code; namely, to conduct oneself so as not to impair significantly the welfare or the educational opportunities of others in the University community.