INF385E Information Architecture and Design

Unique number 28795, Fall 2015
Instructor: Yan Zhang, School of Information
Class time: Monday: 12:00 -3:00 PM
Classroom: UTA 1.210A
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1. Course description

User-centered design of web-based information systems based on interaction design principles and the analysis of user needs and behavior.

2. Course objectives

By the end of the semester, students will be able to:

1. Understand the basic principles of user-centered design, usability, and usability testing
2. Articulate the parameters and principles of the emerging interdisciplinary field of information architecture (IA) and consult some of its major professional resources
3. Develop a coherent view of the IA process, including research, design, and evaluation
4. Analyze and design organization, labeling, navigation, and search systems for web-based user interfaces using a variety of methods and software applications
5. Produce documentations, such as persona, use cases, blueprints, and wireframes

3. Texts

3.1 Required texts

1. Morville, P., & Rosenfeld, L. (2006). Information Architecture for the World Wide Web: Designing Large-scale Web Sites. O'Reilly. (3rd edition) [Newer edition of this book (4th edition): Information Architecture: For the Web and Beyond will be available in Sep. 2015]

2. Brown, D. M. (2010). Communicating Design: Developing Web Site Documentation for Design and Planning. New Riders. (2nd edition)

Additional readings will be posted on the class website.

3.2 Recommended text

1. Resmini, A., & Rosati, L. (2011). Pervasive Information Architecture: Designing Cross-Channel User Experiences (1st edition). Burlington, MA: Morgan Kaufmann.

2. Ding, W., & Lin, X (2009). *Information Architecture: The Design and Integration of Information Spaces*. Morgan & Claypool. [Note: Fulltext is online available through the UT Library]

3. Wodtke, C. (2009). Information Architecture: Blueprints for the Web (2 edition). Berkeley, CA: New Riders.

4. Krug, S. (2005). Don't Make Me Think: A Common Sense Approach to Web Usability, 2nd Edition (2nd edition). Berkeley, California: New Riders.

4. Policies

4.1 Policies concerning assignments

- Assignments must be submitted by midnight (11:59PM) on the due date.
- In fairness to students who turn in assignments on time, all late papers will be penalized by lowering the earned grade one grade level (e.g., from A- to B+; from B to B-) for each day that the assignment is late.
- No assignment submitted more than one week after the due date will be accepted.
- These penalties will not apply to students who know in advance that they will be submitting an assignment late, and let me know in advance. "In advance" means up until 24 hours before the class session in which the assignment is due.

4.2 Policies on class attendance and participation

- Reading assignments must be done before class so that you can ask questions and participate in discussions in class.
- You must participate in class discussions. In-class discussions and activities play an important role in this class. Extensive participation in class discussion will be an essential element of your learning success on the subject of understanding and serving users. Active involvement in learning increases what is remembered, how well it is assimilated, and how the learning is used in new situations. Class participation will be graded as part of your final grade.
- Attending each class is highly recommended. If you know in advance that you must miss a class, let me know in advance (up until 24 hours before the class session).
- If you miss a class session, unexpectedly, get in contact with me or the TA ASAP.

UT honor code applies in this class. Academic dishonesty, such as plagiarism, cheating, or academic fraud, will not be tolerated in this class. Please refer to the UT General Information Bulletin, Appendix C, Sections 11-304 and 11-802 for more information.

The instructor is happy to provide all appropriate accommodations for qualified students with documented disabilities. The University's Office of the Dean of Students at 471.6259, 471.4641 YYT, can provide further information and referrals as necessary.

The instructor reserves the right to make revisions or amendments to the syllabus as the semester progresses (to improve the class or to respond to unexpected events). Emails will be used to inform students about changes in the course schedule, or readings.

5. Grading

5.1 Grading scale

In the School of Information, the following guidelines are used in grading:

A	4.00	Excellent. High degree of mastery of the course material.
A-	3.67	Very good.
B+	3.33	More than satisfactory.
B	3.00	Satisfactory. Work consistent with academic expectations of graduate students.
B-	2.67	Less than satisfactory.
C+	2.33	Unsatisfactory. May indicate the instructor's reservations about the student's ability to meet the iSchool's academic requirements.
C	2.00	Unsatisfactory. Indicates the instructor's reservations about the student's ability to meet the iSchool's academic requirements.
C-	1.67	Unsatisfactory. Indicates the instructor's strong reservations about the student's ability to meet the iSchool's academic requirements. Any course with a grade lower than C cannot be counted toward a student's degree.
D	1.00	Unacceptable. Indicates the instructor's very strong reservations about the student's ability to meet the iSchool's academic requirements and to earn a graduate degree. Any course with a grade lower than C cannot be counted toward a student's degree.
F	0.00	Failing.

Semester grades will be computed as follows:
A = 94-100; A- = 90-93
B+ = 87-89; B = 84-86; B- = 80-83
C+ = 77-79; C = 74-76; C- = 70-73
D = 60-69
F = anything below 59

5.2 Grading rubric for presentations in the class

For all your presentations in this class (topic presentations and final project presentations), you are encouraged to use Powerpoint or some other presentation program (such as Open Office or Lotus Symphony). The grading rubric for the presentation is listed below (Note: This rubric was developed by Information Technology Evaluation Services, NC Department of Public Instruction. However, it was slightly modified for our purposes.)

Organization	
Unacceptable	Audience cannot understand presentation because there is no sequence of information
Acceptable	Audience has difficulty following presentation because presenter jumps around
Good	Presenter presents information in logical sequence which audience can follow
Excellent	Presenter presents information in logical, interesting sequence which audience can follow
Subject Knowledge	
Unacceptable	Presenter does not have grasp of information; presenter cannot answer questions about subject
Acceptable	Presenter is uncomfortable with information and is able to answer only rudimentary questions
Good	Presenter is at ease with expected answers to all questions, but fails to elaborate
Excellent	Presenter demonstrates full knowledge (more than required) by answering all class questions with explanations and elaboration
Graphics	
Unacceptable	Presenter uses superfluous graphics or no graphics
Acceptable	Presenter occasionally uses graphics that rarely support text and presentation
Good	Presenter's graphics relate to text and presentation
Excellent	Presenter's graphics explain and reinforce screen text and presentation
Spelling & Grammar	
Unacceptable	Presenter's presentation has more than one misspelling and more than one grammatical error
Acceptable	Presentation has exactly one misspelling and/or exactly one grammatical error, which a spell- or grammar checker would catch
Good	Presentation has exactly one misspelling and exactly one grammatical error, which a spell- or grammar checker would not catch
Excellent	Presentation has no misspellings or grammatical errors
Eye Contact	
Unacceptable	Presenter reads all of report with no eye contact
Acceptable	Presenter occasionally makes eye contact, but still reads most of report
Good	Presenter maintains eye contact most of the time but frequently returns to notes
Excellent	Presenter maintains eye contact with audience, seldom returning to notes
Elocution	
Unacceptable	Presenter mumbles, incorrectly pronounces terms, and speaks too quietly for audience in the back of room to hear
Acceptable	Presenter's voice is low. Presenter incorrectly pronounces terms. Audience members have difficulty hearing presentation.
Good	Presenter's voice is clear. Presenter pronounces most words correctly. Most audience members can hear presentation.
Excellent	Presenter uses a clear voice and correct, precise pronunciation of terms so that all audience members can hear presentation.

6. Assignments

6.1 Overview

This is an overview of the assignments for this course:

	Assignment		Points
1	Attend class and participate in class discussion		15
2	Topic presentation	Due various dates	15
3	*Group project I*	Sep. 28	
	Design critique		15
4	*Group project II*		
	Project proposal	Oct. 5	5
	Competitive analysis	Oct. 26	10
	Final report	Dec. 7	30
	Final project presentation	Nov. 30	10
			100

6.2 Requirements for each assignment

1. Attend class and participate in class discussion

Students are required to physically attend each class and arrive at each class promptly. Class attendance will be graded. If you know that you must miss a class, let me know in advance (up until 24 hours before the class session). If you miss a class session, unexpectedly, get in contact with me ASAP. You are also encouraged to participate in class discussion. Class participation will also be graded.

2. Topic presentation

Each pair of students will need to select one research topic listed below and present the topic in the class. The presentation should last about 20-30 minutes, followed by a brief Q & A session. Use visual aids, such as PowerPoint, in your presentation. The presentations will be evaluated based on the rubric shown in section 5.2.

	Presentation topic	Date of presentation	Name
1	Database-driven websites	Sep. 21	
2	Search engine optimization	Sep. 21	
3	Dublin core metadata	Sep. 28	
4	Folksonomies	Sep. 28	
5	MeSH (Medical Subject Headings) controlled vocabulary	Sep. 28	
6	Participatory design	Oct. 5	
7	Metaphors in web design	Oct. 12	
8	Design patterns	Oct. 19	
9	Design for credibility/persuasion	Nov. 2	
10	Design for accessibility	Nov. 2	
11	Recommender systems	Nov. 16	
12	Content management systems	Nov. 16	
13	Cross-channel IA/Cross-channel experiences	Nov. 23	

3. Design critique

This is a group project. Each group could consist of 3-4 students. The design critique is a written critique with accompanying "before" and "after" screenshots of a webpage. The webpage could be any pages on the sites, such as homepage and search result page. You may choose to do a design critique of a page from one of the following websites. But you can also choose a page from other sites, upon the approval of the instructor (yanz@ischool.utexas.edu)

	Websites	Group
1	www.amazon.com (online shopping website)	
2	www.youtube.com (video sharing website)	
3	http://answers.yahoo.com (Social Q&A website)	
4	www.webmd.com (consumer health website)	
5	www.healthline.com (consumer health website)	
6	www.cnn.com (news outlet website)	
7	www.wired.com (technology magazines and blogs)	
8	http://www.diabeticconnect.com/ (an online community)	
9	www.facebook.com (a social networking site)	

The critique is expected to be ***4-5 pages*** long. In the critique, you will need to include a screenshot of the current page, and a screenshot of your new design with comments on why you are making changes to the design. When you create the new design, take into consideration the audience for the site, users' information searching behavior, accessibility, information organization, labeling, navigation, search, and other related IA elements. When discussing the changes, focus on how the individual page should work and what a good IA would make the page fulfill its designated purposes. Be concise.

For the re-design, digital designs are required. There are two main methods for preparing your proposed design:

- Download the HTML and graphics for the page and modify the source code yourself.
- Take a screenshot of the page and use a graphic editing program (e.g., Photoshop) to "paint over" your proposed re-design.

Please number the design elements in your re-designed screenshot and number the texts that discussing those elements correspondingly.

4. Final project

This is a group project. Each group can have 4 students at maximum. In this project, you are going to design a web-based solution (websites, web-based applications, or mobile apps) for an organization or for a particular population to serve a particular purpose. A project proposal is required and must receive approval before additional work begins. The steps for this project include:

1. Decide on the website/application you would like to design and the population you would like to serve. Discuss your idea(s) with the instructor.
2. Prepare and submit ***a brief proposal*** (no more than 1 page) outlining
    a. The purpose of the site/application
    b. Its scope
    c. The process for conducting the design, including methods you are going to use (e.g., interviews, focus group, cart sorting, user testing) and documentations that you will produce in the process (e.g. personas, concept maps, wireframes, and usability test plans, et al.).
    d. A timeline for completing your project
3. Work on the project based on your proposal:

a. Perform the tasks that you have outlined in your proposal (e.g., conducting competitive analysis, composing content inventory, constructing conceptual maps, designing templates or sample pages, and so on), and produce corresponding documentations.
b. Verify your design with heuristic evaluation or other lightweight user testing. Document usability problems that you identify in the test.

There are three deliverables for the final project:

a. ***A competitive analysis*** of similar products
b. ***A final report*** that includes all the documentations you have produced in your design (including the competitive analysis results)
c. ***Presentation*** of the project**.** The presentation should include, but not limited to, a graphical view of the website/application, functions of the site/application, rationale concerning various IA decisions, challenges that you have met, and potentials for improvements. The presentation should be about 20-30 minutes long, with 5 additional minutes for Q&A. The grading criteria for this presentation are the same as the criteria for evaluating your individual topic presentations (see section 5.2).

7. Schedule & Readings

7.1 Schedule

	Date	Subjects
1	Aug 31	Basics: What is IA
2	Sep 7	**Labor day holiday**
3	Sep 14	Principles of information architecture
4	Sep 21	Search systems and search interface
5	Sep 28	Metadata and controlled vocabulary ***Due: Design critique***
6	Oct 5	Development process for IA: Research, strategy, and design (1) ***Due: Project proposal***
7	Oct 12	Development process for IA: Research, strategy, and design (2)
8	Oct 19	Development process for IA: Research, strategy, and design (3)
9	Oct 26	IA in practice ***Due: Competitive analysis***
10	Nov 2	Development process for IA: Evaluation
11	Nov 9	** ASIST Conference **
12	Nov 16	Designing for conversation, collaboration, & sharing (social web)
13	Nov 23	IA for mobile devices
14	Nov 30	Final project presentation
	Dec. 7	***Due: Final report***

7.2 Readings

1. Aug. 31 **Basics: What is IA**

Readings
M&R, Ch 1-3

Dillon, A., & Turnbull, D. (2010). Information architecture. In Encyclopedia of Library and Information Science. (3rd ed). 1:1, 2361-2368.

Dillon, A. (2002). Information architecture in JASIST: Just where did we come from? Journal of the American Society for Information Science and Technology, 53(10), 821-823.

Toms, E.G. (2002). Information interaction: Providing a framework for information architecture. Journal of the American Society for Information Science and Technology, 53(10), 855-862.

Recommended reading
Brown, D. (2010). Eight principles of information architecture. Bulletin of the American Society for Information Science and Technology, 36 (6).

Jacob, E. K., & Loehrlein, A. (2009). Information architecture. Annual Review of Information Science and Technology, 43(1), 1-64.

2. Sep. 7 ** Labor day holiday **

3. Sep. 14 **Principles of information architecture: Organizing, labeling, and navigation**

Readings
M&R, Ch 4, 5, 6, 7
Brown Ch 1, 2

4. Sep. 21 **Search systems and search interface**

[Topic presentation: Search engine optimization]
[Topic presentation: Database-driven websites]

Readings
M&R: Ch 8

Wilson, M.L., Kules, B., Schraefel, M.C., & Shneiderman, B. (2010). From keyword search to exploration: Designing future search interfaces for the web. Foundations and Trends in Web Science, 2(1), 1-97. Accessed at: http://www.cs.swan.ac.uk/~csmax/pubs/FnTWebSci-Wilson.pdf

Hearst, M. (2006). Design recommendations for hierarchical faceted search interfaces. ACM SIGIR Workshop on Faceted Search. http://flamenco.berkeley.edu/papers/faceted-workshop06.pdf

Hearst, M. A. (2011). 'Natural' search user interfaces. Communications of ACM, 54(11), 60-67.

Recommended readings

Doan, K., Plaisant, C., & Shneiderman, B. (1996). Query previews in networked information systems. In Proceedings of the 3rd International Forum on Research and Technology Advances in Digital Libraries, 120.

Greene, S., Marchionini, G., Plaisant, C., & Shneiderman, B. (2000). Previews and overviews in digital libraries: Designing surrogates to support visual information seeking. Journal of the American Society for Information Science, 51(4), 380-393.

5. Sep. 28 **Metadata & controlled vocabulary**

Due: Design critique

[Topic presentation: Dublin core metadata]
[Topic presentation: MeSH]
[Topic presentation: Folksonomies]

Readings
M&R: Ch 9

Wodtke, C., & Govella, A. (2009). A bricklayer's view of information architecture (pp. 65-77). In Information architecture: Blueprints for the web. 2nd ed. Berkeley: New Riders.

Yee, K.P., Swearingen, K., Li, K., & Hearst, M. (2003). Faceted metadata for image search and browsing. CHI Proceedings 2003, (April 5 - 10, 2003, Ft. Lauderdale, Florida, USA).

Elings, M.W. and G. Waibel. (2007). Metadata for all: Descriptive standards and metadata sharing across libraries, archives and museums. First Monday, 12(3).

Wilson, A. (2003). Why the Dublin Core Metadata Initiative (DCMI) is important. DigiCULT.Info (6), 32-34.

Schwartz, C. (2001). Controlled vocabularies (pp. 83 - 108). In Sorting out the Web: Approaches to subject access. Westport, CN: Ablex Publishing.

Recommended reading
Morrison, P. J. (2008). Tagging and searching: Search retrieval effectiveness of folksonomies on the world wide web. Information Processing and Management, 44, 1562-1579.

Hearst, M. (2006). Clustering versus faceted categories for information exploration. Communications of the ACM, 49(4), 56-61.

6. Oct. 5 **Development process for IA: Research, strategy, and design (1)**

Due: Project proposal

[Topic presentation: Participatory design]

Readings
M&R Ch 10
Brown Ch 3, 10, 4

7. Oct. 12 **Development process for IA: Research, strategy, and design (2)**

[Topic presentation: Metaphors in web design]

Readings
M&R: Ch 11
Brown Ch 5, 6

8. Oct. 19 **Development process for IA: Research, strategy, and design (3)**

Tutorial: How to use Axure (By Yalin Sun)

[Topic presentation: Design patterns]

Readings

M&R: Ch 12
Brown Ch 7

9. Oct. 26 **IA in practice**

Due: Competitive analysis

Readings
M&R: Ch 13, 14, & 15
Brown: Ch 8, 9

Ding, W., & Lin, X (2009). Information Architecture: The Design and Integration of Information Spaces. Morgan & Claypool. Chapter 7: Enterprise IA and IA in practice.

10. Nov. 2 **Development process for IA: Evaluation**

[Topic presentation: Design for credibility/persuasion]
[Topic presentation: Design for accessibility]

Readings
Brown Ch 11, 12

Usability 101: http://www.useit.com/alertbox/20030825.html

Sillence, E., Briggs, P., Harris, P., & Fishwick, L. (2007). Health websites that people can trust – the case of hypertension. Interacting with Computers, 19, 32-42.

11. Nov. 9 ** ASIST Conference **

12. Nov. 16 **Designing for conversation, collaboration, & sharing (Social web)**

[Topic presentation: Recommender systems]
[Topic presentation: Content management systems]

Readings

Ding, W., & Lin, X (2009). Information Architecture: The Design and Integration of Information Spaces. Morgan & Claypool. Chapter 2: Information Architecture and Web 2.0

Vaananen, K., & Waljas, M. (2009). Development of evaluation heuristics for web service user experience. CHI 2009, 3679-3684.

Picard, R. W., Wexelblat, A., & Clifford I. Nass, C. I. N. I. (2002). Future Interfaces: Social and Emotional. In Proceedings of CHI (pp. 698-699).

Donath, J. (2014). How Social Media Design Shapes Society. In the Proceedings of CHI '14 Extended Abstracts on Human Factors in Computing Systems (pp. 1057-1058).

Joshua Porter's blog: Social Design: http://bokardo.com/

Recommended readings

Crumlish, C. (2009). Designing social interfaces: Principles, patterns, and practices for improving the user experience. (1st ed.). Cambridge: O'Reilly Media.

13. Nov. 23 **IA for mobile devices**

[Topic presentation: Cross-channel IA/Cross-channel experiences]

Readings

Ding, W., & Lin, X (2009). Information Architecture: The Design and Integration of Information Spaces. Morgan & Claypool. Chapter 9: Mobile Information Architecture.

Medhi, I., Patnaik, S., Brunskill, E., Gautama, S. N. N., Thies, W., & Toyama, K. (2011). Designing Mobile Interfaces for Novice and Low-literacy Users. ACM Transactions on Computer-Human Interaction, 18(1), 2:1-2:28.

Huber, J., Steimle, J., & Mühlhäuser, M. (2010). Toward More Efficient User Interfaces for Mobile Video Browsing: An In-depth Exploration of the Design Space. In Proceedings of the international conference on Multimedia (pp. 341-350).

Dinh, H. T., Lee, C., Niyato, D., & Wang, P. (2013). A survey of mobile cloud computing: architecture, applications, and approaches. Wireless Communications and Mobile Computing, 13(18), 1587-1611.

Parush, A., & Yuviler-Gavish, N. (2004). Web navigation structures in cellular phones: the depth/breath trade-off issue. International Journal of Human-Computer Studies, 60, 753-770.

Recommended readings

Hoober, S. (2011). Designing mobile interfaces (1st ed ed.). Sebastopol, CA: O'Reilly Media.

Neil, T. (2014). Mobile Design Pattern Gallery: UI Patterns for Smartphone Apps. Sebastopol, CA: O'Reilly Media.
14. Nov. 30 Final project presentation
Dec. 7 ***Due: Final report***

8. Resources

Information Architecture

1. The Information Architecture Institute: http://www.iainstitute.org/
2. Boxandarrows: http://www.boxesandarrows.com/
3. Jesse James Garrett: http://www.jjg.net/ia/
4. Digital web magazine, Topics on Information Architecture: http://www.digital-web.com/topics/information_architecture/

Usability

1. Jakob Nielsen's website: http://www.useit.com/
2. Usability first: http://www.usabilityfirst.com/
3. Usability.gov: http://usability.gov/
4. 10 Useful usability findings and guidelines: http://www.smashingmagazine.com/2009/09/24/10-useful-usability-findings-and-guidelines/

Stencils

Visio

1. Visio stencils for Information Architects: http://www.nickfinck.com/blog/entry/visio_stencils_for_information_architects/
2. Information architecture for designers: http://petervandijck.com/iabook/template.htm

Omnigraffle

1. http://graffletopia.com/
2. http://konigi.com/tools/omnigraffle-wireframe-stencils
3. http://paperplane.net/omnigraffle/
4. http://konigi.com/tools/omnigraffle-ux-template
5. Yahoo! Stencil Kit: http://developer.yahoo.com/ypatterns/about/stencils/

Design Patterns

1. Yahoo!® Design Pattern Library: http://developer.yahoo.com/ypatterns/
2. Martijn van Welie's Web Design Patterns: http://www.welie.com/patterns/
3. The Diemen Patterns Repository: http://www.visiblearea.com/cgi-bin/twiki/view/Patterns/Patterns_repository
4. Tom Erickson's The Interaction Design Patterns Page: http://www.visi.com/~snowfall/InteractionPatterns.html