

The Catholic University of America
School of Library and Information Science
LSC 875 - User Interface Design and Evaluation
Spring 2012

Credit Hours: 3

Prerequisites:

LSC 555: Information Systems in Libraries and Information Centers or permission of the instructor.

Note: This course does not require any computer programming.

Meetings

This class meets primarily face-to-face (f2f), with exceptions noted in the schedule. The class meets on Wednesdays, 4:10-6:40pm, in Pangborn 302.

Regular online participation is expected. We will use CUA's [BlackBoard](#) learning management system extensively for announcements, discussion, assignments, etc. Students are expected to monitor BlackBoard frequently, because updates, administrative information and reminders are frequently posted there.

Instructor Contact Information

Bill Kules, Ph.D., Assistant Professor

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Office hours are posted on [my web page](#).

Description

This course explains how to use design and evaluation techniques to develop successful user interfaces for information systems and other interactive technologies. Students will develop an understanding of the cognitive principles and social issues that affect human-computer interaction. Topics covered include: understanding users and interaction, design strategies, iterative prototyping, formative and summative evaluation, and usability testing. Through a team project, students will apply and refine their knowledge. They will prototype and evaluate the design of a user interface for a real-world system.

Previous projects include:

- Designs for mobile apps
- Prototypes for a faceted library catalog based on the FRBR model
- Redesigning parts of the ALADIN library catalog

- Designing an interactive website for Semitics/ICOR
- Designing a collaborative project tool for a wiki-based learning management system (e.g. improving on BlackBoard)
- Redesigning the MS-Windows desktop for patrons of a local senior center to improve usability
- Designing a new interface for the Metro's SmartTrip farecard machines

This course focuses on interactive design - on developing user interfaces that support people in their everyday and working lives. Students will gain knowledge and skills that will help them advocate for improved user interfaces for library catalogs, digital archives/libraries, web applications and more.

Course Goals

Students will develop an understanding of:

- A user-centered interface design and evaluation process
- Human-computer interaction principles and guidelines
- Techniques for designing and prototyping user interfaces
- Techniques for evaluating user interfaces

Goals for Student Learning

At the conclusion of this course, students will be able to:

1. Explain and apply a user-centered design and evaluation process
2. Explain and apply human-computer interaction principles and guidelines
3. Explain and apply techniques for designing and prototyping user interfaces
4. Explain and apply techniques for evaluating user interfaces

Instructional Methods

This course uses a variety of instructional methods and activities:

- Lecture and discussion based on the readings. These will be both face-to-face and online, and can involve new forms of online dialog like blogs.
- Small group discussions and paired critiques of work products.
- Hands-on exercises for skills development.
- A team project, including student presentation and critique.
- Collaborative learning - You will learn from each other by sharing experiences, knowledge and skills.
- Feedback to and from the instructor. In-class and online feedback is an integral part of the learning and assessment process for both the student and the instructor.
- Classes are recorded (on a best-effort basis) and posted to the class web site for review.

These course activities will be conducted both face-to-face (in class) and online. Students are expected to be online frequently. If you do not have daily access to the Internet, please contact

the instructor before the first class meeting.

Students should be aware that CPIT conducts routine system maintenance each Thursday, 7:00 am - 9:00am, and the third Sunday of the month, 7:00am - 2:00 pm. During these times, BlackBoard and other systems may not be available. Students should plan accordingly.

Course Schedule

This schedule provides approximate dates for topics and major assignments. Detailed information, including weekly activities, exercises, and specific due dates, will be posted to BlackBoard, and takes precedence over this schedule. The schedule and syllabus are subject to change as needed. Any changes will be posted in BlackBoard.

Week	Meeting Date	Topics	Major Assignments (approximate due dates)
1	Jan 11	Introduction - User-Centered design. System Development Life Cycle (SDLC)	
		Jan 16 Rev. Martin Luther King, Jr. Day Holiday	
2	Jan 18	Interaction. Interaction Design	Homework 1
3	Jan 25	Introducing Evaluation. Usability Testing and Field Studies.	Project proposals
4	Feb 1	Data Gathering. Data Analysis. Analytical Evaluation	Homework 2
5	Feb 8	Understanding Users. Designing for Collaboration and Communication	Project Plan
6	Feb 15	Identifying Needs and Establishing Requirements.	
7	Feb 22	Interfaces and Interactions	Project - Use Scenarios, Requirements Analysis and Conceptual Design
8	Feb 29	Pilot sessions for usability evaluation	
		Mar 5-11 Spring Break	
9	Mar 14	Design, Prototyping and Construction.	Prototype 1
10	Mar 21	Project-based application: Elaborating requirements & prototyping	
11	Mar 28	Project-based application: Evaluation	Prototype 2
12	Apr 4	Accessibility and Diversity	
		Apr 5-9 Easter Break	
13	Apr 11	Tentative: Guest lecture	Prototype 3
14	Apr 18	Presentations. Course evaluations	Project - final report

Required Course Text

Interaction Design: Beyond Human - Computer Interaction, 3rd ed
Rogers, Sharp & Preece
Wiley; 3 edition (June 21, 2011)
ISBN-10: 0470665769
ISBN-13: 978-0470665763
602 pages

Required Technologies

The following technologies are taught as an essential part of this course or required for course delivery:

- Publishing a web page to the CUA Personal Web Site
- Use of a wiki for shared content development and collaborative activity

Reading Materials

Readings are drawn primarily from the course text and the following materials. Specific reading assignments are provided for each week in BlackBoard. For your convenience, hyperlinks are provided to documents available on the open web. Although I try to keep these links current, there are no guarantees - links change and do break, and you may need to use a web search engine to locate the readings or locate them in ALADIN. Readings without hyperlinks are available from ALADIN except where noted.

- [User-Centered Design](#)
- [A History of HCI](#)
- Wadlow, M. G. (1994). [Design as a way of life](#). *SIGCHI Bulletin*, 26(1): 7-8
- Stubblefield, W. A. (1998). [Patterns of change in design metaphor: A case study](#). In *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems*, 73-80.
- [The interface hall of shame](#)
- [10 Most Wanted Design Bugs](#)
- [Usability Evaluation of Scholar - Summary version](#)
- [Usability Evaluation of Scholar - Full version](#)
- [Usability in e-Learning Platforms: Heuristics comparison between Moodle, Sakai and dotLRN](#)
- [1st Principles of Design](#)
- Norman, D. (1999). [Affordances, conventions and design](#). *ACM Interactions Magazine* May/June, 38-42.
- Arent, M., ed. (2006) Special Issue: The Art of Prototyping. *ACM Interactions Magazine*. January/February 2006. 13 (1).
- [Section 508 Web Accessibility Tutorial](#)

- [Universal Usability](#)

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COURSE REQUIREMENTS AND ASSESSMENT

Grading

Grades for this course will be based upon the following elements:

Component	Percent
Class Participation	10%
Homework 1	15
Homework 2	15
Project - Requirements	10
Project-Prototype 1	10
Project-Prototype 2	10
Project-Prototype 3 & final report	10
Final Assignment	20
TOTAL	100

Final grades will be assigned as follows:

Letter	Numeric range
A	94-100
A-	90-93.99
B+	86-89.99
B	82-85.99
B-	78-81.99
C	70-77.99
F	Below 70

University grades: The University grading system is available at <http://policies.cua.edu/academicundergrad/gradesfull.cfm#ii> for undergraduates and <http://policies.cua.edu/academicgrad/gradesfull.cfm#iii> for graduate students. Reports of grades in courses are available at the end of each term on <http://cardinalstation.cua.edu>.

Class participation - In class and online

Class participation includes face-to-face sessions, online discussions, exercise completion, etc. Each class is critical to your learning experience. Your energy in contributing to class discussions, small-group exercises, and online activities and discussions will be important. Therefore, arriving at class on time and prepared (e.g., reading all course readings *before class*, working on project research, etc.) and actively participating will be necessary to receive full credit for class participation. The readings are intended to stimulate questions in addition to providing information. It is a good strategy to make notes of questions and comments as you read - these can be useful contributions to the discussion.

Exercises and other activities are provided to help you learn and practice course material, especially specific techniques or tools. We will often start an exercise in class and have you finish afterwards. Although they are not formally graded, they contribute to your participation grade - you are expected to complete them and post your results, comments, etc. as instructed.

Homework

Each homework assignment will incorporate the topics being covered and selected skills. Assignments span multiple weeks. All assignments must be posted or submitted by noon on the day they are due, unless otherwise noted. If the assignment is submitted anytime after noon, your grade will be reduced by 10%. Each day it is late thereafter you will lose an additional 5% point (e.g., submitting one day late would reduce your grade by 15%).

Term Project & Presentation

For the term project you will (re)design a user interface for an information system. This involves prototyping and evaluating an information access application of substantial size and complexity over the course of the semester. The focus of this project is the design process, not implementation, so you do not need to build a working implementation. At the final presentation, clients as well as other faculty and students may be invited. The project will proceed in the following phases (subject to revision):

- Form project teams, decide on a goal, and draft project proposal
- Use Scenarios, Requirements Analysis and Conceptual Design
- Design strategies and first round prototype
- Second round prototype and evaluation
- Third round prototype, class presentation and project portfolio

Students will typically work in teams of 2-3 (although I will consider individual projects or larger groups). Working with a larger group allows you to undertake a more ambitious and rewarding project. You will gain experience working on a technology project in a group - which is a real-world requirement for most jobs. Your group will present its work during the last class session.

NOTE: Each part of the term project must be submitted by the due date at noon except where noted. If it is not submitted on time that day, your grade will be reduced by 10%. For each subsequent day it is late your grade will be reduced by 5%.

Final Assignment

The final assignment will include several essays that cover material from the course. This will give you an opportunity to apply what you have learned during the semester and critically reflect

on your experience.

Submitting Assignments

All assignments are to be submitted electronically through the class web site or posted online as instructed.

Late work. The instructor will not accept late work except by prior arrangement. If accepted, it may not be graded until the end of the term.

Makeup work. If a student has a legitimate reason, such as a medical or family emergency, the instructor may allow a student to do makeup work. The amount and nature of the work is up to the instructor's discretion. It will be graded at term's end. Documentation of the emergency (e.g. a doctor's letter) may be required.

Place your name and email address at the top of all pages. Any work submitted with numerous grammar, spelling or format problems will be penalized.

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COURSE POLICIES AND EXPECTATIONS

Academic Honesty

Academic honesty is expected of all CUA students. Faculty are required to initiate the imposition of sanctions when they find violations of academic honesty, such as plagiarism, improper use of a student's own work, cheating, and fabrication. The following sanctions are presented in the University procedures related to Student Academic Dishonesty (from <http://policies.cua.edu/academicundergrad/integrityprocedures.cfm>): "The presumed sanction for undergraduate students for academic dishonesty will be failure for the course. There may be circumstances, however, where, perhaps because of an undergraduate student's past record, a more serious sanction, such as suspension or expulsion, would be appropriate. In the context of graduate studies, the expectations for academic honesty are greater, and therefore the presumed sanction for dishonesty is likely to be more severe, e.g., expulsion. ...In the more unusual case, mitigating circumstances may exist that would warrant a lesser sanction than the presumed sanction." Please review the complete texts of the University policy and procedures regarding Student Academic Dishonesty, including requirements for appeals, at <http://policies.cua.edu/academicundergrad/integrity.cfm> and <http://policies.cua.edu/academicundergrad/integrity.cfm>.

Plagiarism will not be tolerated. Always cite your sources.

Participation and Conduct:

Attendance is required, in keeping with university policy. Your class participation grade depends on being in class and actively participating in class and online. If you will be unavoidably absent, you must consult with the instructor as early as possible. Arrive on time. Late arrival will affect your class participation grades.

If class is cancelled due to weather or other emergency, check the online announcements the next day. We will generally hold class online when this happens.

Behave respectfully. Students are expected to behave respectfully at all times: while in class, in public discussion forums, and when using email. Participation grades will reflect a student's maturity level and professionalism; cooperation and collaboration with the class; and whether the student meaningfully contributes to course discussions.

No phone calls during class. Turn off or silence cell phones and pagers. Students leaving the room for calls may not be allowed to return to that class session.

No grade discussions in class. Instructor will not discuss grades in class. First consider why the instructor deducted points. If you still disagree, explain your disagreement in an e-mail to the instructor.

Accommodations for students with disabilities

Any student who feels s/he may need an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. Please contact Disability Support Services (at 202 319-5211, room 207 Pryzbyla Center) to coordinate reasonable accommodations for students with documented disabilities. To read about the services and policies, please visit the website: <http://disabilitysupport.cua.edu>.

The CUA guide for services and accommodations for students with disabilities can be found at <http://counsel.cua.edu/ADA/publications/disbro/contents.cfm>. Some basic guidelines and links to other information may be found at: <http://counsel.cua.edu/ADA/clicks/>.

Syllabus changes

The instructor reserves the right to make changes to this syllabus as needed. Nothing in this syllabus may be construed as a contract. All changes will be provided to students via the class site.

Acknowledgements

This material was originally adapted from material by Doug Oard. I co-taught this class with Ryen White during the Spring 2006.

Revision History