

# LIS 677 Human Dimension in Information Systems

**Fall 2002:** Meets Wednesdays 1:00 - 3:40 p.m. in HL 2

**Instructor:** Dr. Diane Nahl, Associate Professor

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**Web Site:** [www2.hawaii.edu/~nahl](http://www2.hawaii.edu/~nahl)

**Office Hours:** Tuesday 11:00 a.m.-1:00 p.m.; Wednesday 4:00-5:00 p.m.; Thursday 11 a.m.-2:30 p.m.; and by appt.

## Course Description

Focuses on the human element in information systems. Examines human physical, cognitive, and affective abilities and behaviors in interactions with information systems, with an emphasis on cognitive theories, research on information system use, and applying qualitative and quantitative research methods in user studies.

**Prerequisite:** LIS 670 or consent.

## Program Learning Objectives

This seminar addresses the following objectives of the LIS Program, enabling students to demonstrate an understanding of:

1. The philosophy, principles, and ethics of library and information science.
3. The development and interrelationship of librarianship and information science.
4. The theories and processes for selecting and organizing information sources.
5. The theories and processes involved in retrieval, dissemination, and utilization of information sources.
7. Research techniques and methods of applying new knowledge as it becomes available.

Enabling students to demonstrate basic competency and apply knowledge in:

9. The latest information technologies.
10. Providing, managing, and designing information services for diverse user groups in a variety of information environments.
11. Professional attitudes, commitment to service, and interpersonal skills needed to work effectively with colleagues and information users.

## **Course Learning Objectives**

This seminar enables students to:

1. Create and apply evaluative criteria to information system interfaces.
2. Critically review the interdisciplinary literature on a particular aspect of human-system interaction.
3. Design, conduct, analyze, and report on a pilot field study with information system users.
4. Critically review and discuss selected research and theory from cognate fields (cognitive science, psychology, computer science, information science, communication, education).
5. Apply philosophical and ethical principles of LIS in designing and evaluating human-system interaction.

## **Teaching Method**

Primary emphasis is on wide reading, online and in-class group discussion, and critical analysis. Oral and written assignments are designed to promote these activities. Guest presentations, demonstrations, problem-solving and evaluation exercises enliven concepts and theories presented in readings and lectures. Consult written assignment instructions on pp. 6-10. Attendance and constructive participation are required.

## **Requirements**

### **Readings**

Nahl, Diane. (2001). *Strategic Research Approaches*. Dubuque, Iowa:

Kendall-Hunt.

The text is available in the UH Bookstore. Assigned reading from the text and articles in information science, cognitive science, psychology, sociology, human factors, and computer science will be the focus of class discussions. Weekly discussion questions are presented in the Required Seminar Readings handout.

## Assignments and Grading

Field Research Report	40%
Written (30%)	
Oral (10%)	
Interface Critique	30%
Written (20%)	
Oral (10%)	
Readings Discussion	30%
	100%

Grading Scale: 90-100 = A; 80-89 =B; 70-79 =C; 60-69 =D

## Due Dates

One point (1) will be deducted each day for late papers and assignments. If you miss class, you are responsible for obtaining notes from classmates and handouts from the instructor. If you have an oral interface report or field study report due the same day as a written paper, you may turn-in the written paper one session later without penalty.

## Participation Requirements

Active class participation is essential when discussing readings, analyzing

systems, and working in groups. Class exercises and discussions are central to the seminar's purpose of examining the human dimension in information systems. Students will present material from readings weekly, both in class and on the WebCT discussion forum (30%).

To accomplish this, students need written notes from lectures and readings that address the weekly discussion questions. These notes will be useful in seminar discussions of these questions. Since we are all information system users, this class acts as a learning community, and in order to promote thoughtful consideration of issues, students are expected to prepare answers to discussion questions and present their answers, as well as additional comments and criticism. We all need to hear and learn from each other's contributions through constructive comments and reactions in discussions. These notes are necessary to facilitate active participation in class, to create well thought-out responses for the discussion forum and to write the required papers. In class, please **discuss the readings without flipping through articles during the discussion to locate "the answer."** Full points (30%) will be awarded only if all participation requirements are met. Attendance is required. Two or more absences require written reports on the required readings for missed sessions.

### **Technology Requirements**

This seminar requires you to use a computer to produce all of the written assignments. PCs and Macs are available in the LIS and UH computer labs, but you must bring your own paper to print. Students are also required to log on to the 677 WebCT discussion forum and post weekly messages addressing assigned topics.

Students are expected to use the Internet to explore the issues presented in the course. Students will locate and study World Wide Web resources pertinent to the course topic, utilize several online database systems, and write reports integrating these activities.

# Seminar Schedule

(Subject to change)

Session	Date	Topics	Assignments & Due Dates
1	AUG 28	Seminar Introduction Method and Theory in Human Information Seeking Studies	Self-registration for <a href="#">WebCT</a>
2	SEP 4	Human Affect and Cognition Technology Acceptance	Text Ch 1 Dillon & Morris, Norman
3	SEP 11	Information Behavior	Text Ch 2 Wilson
4	SEP 18	User Studies: Usability Testing	Text Ch 3 Clairmont <i>et al.</i> Interface Critique:
5	SEP 25	User Studies: Human Uncertainty	Text Ch 4 Wilson et al. Interface Critique:
6	OCT 2	User Studies: Web Information Behavior	Text Ch 5 Schraefel et al. Interface Critique:
7	OCT 9	User Studies: Digital Information Behavior	Text Ch 6 Bates, Bates Interface Critique:

8	OCT 16	User Studies: Capturing Information Behavior	Text Ch 7 Griffiths <i>et al.</i> Interface Critique:
9	OCT 23	User Studies: Navigation Assistance	Mat-Hassan, <i>et al.</i> Interface Critique: <b>DUE</b> : Written Interface Critique
10	OCT 30	User Studies: User Centered Design	Text Ch 8 Allen Interface Critique:
11	NOV 6	User Studies: User Centered Design	Klein <i>et al.</i> , Picard Interview Interface Critique:
12	NOV 13	User Studies: Search Behavior	Text Ch 9 Nahl & Tenopir Interface Critique:
13	NOV 20	User Studies: Naturalistic Usability	Hert <i>et al.</i> Field Study Report:
14	NOV 27	Problem Solving	Glass & Holyoak Field Study Report:
15	DEC 4	Categorization Behavior	Lakoff Field Study Report:

16	DEC 11	Documentation for Novice Users	Nahl Field Study Report: <b>DUE</b> : Field Research Paper Course Evaluation
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## Interface Critique

Select and analyze a particular information system interface according to standard and additional criteria. Demonstrate the interface to the class and present your analysis, inviting input from the participants.

### Requirements

1. Select an information system interface, preferably Web-based.
2. Decide on a set of interface evaluation criteria taken from standard texts, Web sites, published standards, research or trade literature.
3. Focus the analysis on the potential community of users of the system by developing or selecting user-oriented criteria to add to the standard criteria you selected.
4. Test the interface against these evaluation criteria by identifying and performing tasks that are routine for that interface.
5. Present your findings, project and demonstrate the interface, and lead a discussion on the merits and limitations of the design and functionality of the interface for 20-30 minutes. Oral presentations are scheduled for September 18-November 16.
6. Submit a written analysis of your findings on your Web site, including a

well-organized, point-by-point assessment. Written Web report due October 6.

## Useful Sites

### (Century's Top Ten Interfaces)

[www.techreview.com/articles/nov99/kreuze.htm](http://www.techreview.com/articles/nov99/kreuze.htm)

### (Design-Critique Sites)

[www.websitesthatsuck.com/](http://www.websitesthatsuck.com/)

[www.useit.com/](http://www.useit.com/)

[asktog.com/basics/firstPrinciples.html](http://asktog.com/basics/firstPrinciples.html)

[www.builder.com/Graphics/Critique/index.html](http://www.builder.com/Graphics/Critique/index.html)

[zing.ncsl.nist.gov/WebTools/tech.html](http://zing.ncsl.nist.gov/WebTools/tech.html)

[www2.hawaii.edu/~mwhang/SGIA/toolbox/index.html](http://www2.hawaii.edu/~mwhang/SGIA/toolbox/index.html)

[usableweb.com/topics/](http://usableweb.com/topics/)

[degraaff.org/hci/publications.html](http://degraaff.org/hci/publications.html)

*ASIST Information Architecture List:* [majordomo@www.asis.org](mailto:majordomo@www.asis.org)

[sgia-l@asis.org](mailto:sgia-l@asis.org)

[www.asis.org/Conferences/Summit2000/Information\\_Architecture/listserv.html](http://www.asis.org/Conferences/Summit2000/Information_Architecture/listserv.html)

### (Live Reference Service Sites)

[www.public.iastate.edu/~CYBERSTACKS/LiveRef.htm](http://www.public.iastate.edu/~CYBERSTACKS/LiveRef.htm)

[www.vrd.org](http://www.vrd.org)

[www.loc.gov/rr/askalib/](http://www.loc.gov/rr/askalib/)

[www.kiwilogic.co.uk/images/lssi/index.html](http://www.kiwilogic.co.uk/images/lssi/index.html) (plus a reference BOT)

[www.botspot.com](http://www.botspot.com) (BOTS in general)

### (Interesting Search Engines)

[www.kartoo.com/](http://www.kartoo.com/)

[www.vivisimo.com](http://www.vivisimo.com)

[www.teoma.com](http://www.teoma.com)

[labs.google.com/sets](http://labs.google.com/sets)

[www.cs.umd.edu/hcil/treemap3/applet/index.shtml](http://www.cs.umd.edu/hcil/treemap3/applet/index.shtml)

[www.queryserver.com/web.htm](http://www.queryserver.com/web.htm)

[\(HCIL Lab video\)](#)

[\(Hunter Gatherer demo video\)](#)

Grading Criteria: Clarity of user focus in evaluation criteria; clear distinctions made between criteria; evidence of critical assessment; cogent demonstration; active interaction with class; audibility; readability.

## Field Research Report

The purpose of this assignment is to enable students to gain skill in assessing the effectiveness of information system use through:

- Designing outcomes assessment tools to investigate interface effectiveness.
- Designing pilot projects to study users in natural information settings.
- Using research concepts, methods and statistics to analyze user behavior and make useful recommendations for redesign and improvement of outcomes.

These pilot study projects will be conducted in a research workshop environment with time set aside in class to work on the design and the analyses. Statistical analyses will be kept simple, but teams will work with spreadsheets for the raw data analysis.

Select an environment where humans are using information systems (includes manual, CD-ROM, or Web). Design a small, pilot study of some of the human users in that environment. Review the literature on relevant aspects of the user, system, and other parameters pertinent to your study.

Gather and analyze data, and present the findings in a standard written research report and orally to the class. Relate your findings to prior research in the literature review.

This can be a team project, but the reports will be written individually. We will use the format for published research articles. You may share the same Abstract, the bibliographic References and the Methodology section. Each person will write an individual Introduction with literature review, Results, and Conclusion sections. You may choose to focus on particular aspects of the data in your individual write-up. Under some circumstances, for those who are interested, I will work with you to create a publishable research paper.

Research with human subjects requires adherence to certain federal guidelines. Visit the [human participants certification site](#) and take the tutorial before beginning this project. The tutorial and certification are free.

## **Requirements**

### **A. Describe the research project in the Introduction, including relevant features:**

1. The information system environment and its components.
2. The role and typical activities of users in that environment.
3. What you want to look at and why.
4. Cite some research literature and discuss its relevance to your study. Include information found in the required readings as well as other user studies. Include tie-ins to aspects of information behavior, user-centered interface design, and affective acceptability.

### **B. Describe the research design and methodology, including:**

1. The information system setting and participants.
2. Your research design diagram.
3. Your hypotheses (your expectations of what you'll find before you gather or analyze any data).
4. The type of data gathered and the instrument(s) used to gather the data. (systematic observations, testing, interview, questionnaire, structured report, log files, ratings, etc.).
5. The exact procedures you followed while gathering and analyzing the data.
6. Identify any potential confounding variables or limitations that might interfere with making a correct interpretation of the data or in generalizing it.

**C. Discuss the findings, the results of your analysis, including:**

1. What the data reveal about the information system dynamic (use tables, charts, and/or graphs to represent data). Label each table, chart and graph with a number and descriptive title. Place them within the text, mention them by number and discuss each. Make sentences from data in tables and graphs to explain your results.
2. Discuss implications for human users, interface design, instruction and training, and outcomes assessment. Tie-in to research literature to relate your findings to other studies, to relevant aspects of information behavior and HCI principles.
3. Conclude with your own recommendations for further research, information services, instructional practice, and system design.

4. Make final remarks to future students about the research process and what you learned from this assignment.

5. Free Statistical Analysis Tools

[www.economics.Pomona.edu/StatSite/ssp.html](http://www.economics.Pomona.edu/StatSite/ssp.html)

[www.visualstats.org/](http://www.visualstats.org/)

## D. Format

1. Reports should be accessible on the Web, about 10 pages (including graphics, instruments and references), double-spaced. Use a standard citation style for the field (prefer APA style). *Extra credit:* a one-page PowerPoint slide consisting of the Title, Name, Date, Course, Abstract and a graphic of major results.

2. Organize the research report under the following sub-titles:

**Title** (State the IV/DV cause-effect relationship.)

**Abstract** (Briefly summarize problem, method and results)

**Introduction** (State the research problem and review relevant literature.)

**Methodology** (Describe the research design and all procedures followed.)

**Results and Discussion** (Present analyses and interpretations of data.)

**Conclusion** (Summarize the important findings and make recommendations for future research and for practice. In a separate paragraph, make evaluative comments to future students.)

**References**

**Appendices** (Data gathering instruments.)

3. Make a 20 minute oral presentation of your study to the class (to be scheduled in class for **November 20, 27, & Dec. 4**). The written report is due **December 11**.

Grading Criteria: Following instructions; technical accuracy (grammar, spell checking, typos, consistency in citation/reference style); coherent synthesis of data and rationale for methodology used; relevant integration of research literature; evidence of critical thinking; application of seminar concepts, theories, and models.