

DCTE 820: PROJECT IN HUMAN-COMPUTER INTERACTION

Cluster term dates: March 7, 2008 – August 6, 2008

Objective: This course requires the student to produce a research paper on a current topic in HCI. The project is one that delves in-depth into a specific research area of human-computer interaction.

PROJECT DELIVERABLES

Original work is expected that is grounded in theory and practice on a relevant issue in HCI research. The student is expected to isolate a particular topic relevant to HCI, investigate the topic through extensive literature search and deep synthesis, and produce a scholarly project. High-level research and writing is expected for the project work.

The primary objective of this research paper is to provide students with the opportunity to isolate a particular topic of their own interest relating to human-computer interaction and to explore the topic area in depth. Future research should be addressed in depth.

Project Requirements and Due Dates

- **All deliverables are to be submitted through WebCT.**
- **All deliverables must conform to form and style requirements as specified in the SCIS Dissertation Guide and APA Manual 5th Edition.**
- **Incompletes will not be issued for this course. All due dates must be adhered to.**
- **Work completed in DCTE 720 or any other course cannot be reused for DCTE 820**
- **Follow IRB Guidelines as appropriate.**
- **Papers will be graded for degree of original work, content, scholarly synthesis of literature, organization, language and style.**

Project idea paper: 2 pages detailing the problem and work to be done. This is for the professor to determine the suitability of the topic in writing. Students are to submit the idea paper through WebCT, not email (although some prior general discussion about the topic can be done through email if needed). **Due: Sunday, April 6, 2008.**

Project proposal: Building on the approved project idea paper, the proposal is 8-10 pages containing details of the proposed work and presenting the draft of literature integration and synthesis. **Due: Sunday, May 4, 2008.**

Project Final Report: Expanding on the approved proposal, the final paper is 30-35 pages in length providing complete expansion of the paper. **Due: Sunday, July 27, 2008.**

Sample Topic Areas:

Students will isolate a particular topic of their own interest relating to HCI, investigate the topic through literature search, and produce a scholarly paper. Below are SOME suggested areas that are appropriate for further investigation. Please see the topic list in the Course Guide under Assignment #2 for DCTE 720. The selected topic for this project paper should be related to a current trend in HCI research, namely found in recent SIGCHI conference proceedings.

- **Accessibility:** The complex issues related to accessibility and design (e.g., as in accessibility in web site design)
- **Agent Technology:** Interfaces for agent technology, social aspects of agent technology, usability.
- **Analysis and Evaluation Techniques:** Methods for analyzing and evaluating the effectiveness of designs and implemented systems.
- **Application-Specific Designs:** Interfaces for specific application areas, in which the domain places significant constraints on the design or implementation of the interface.
- **Design Processes:** Explorations of the design process, techniques for capturing designs, and methodologies for producing good designs.
- **Development Tools and Methods:** Toolkits and interactive systems for constructing interfaces.
- **Group Work:** Explorations of people using computers to work together, and systems for enhancing group work.
- **HCI and the Web:** Explorations of Web technologies, user considerations, design issues, standards.
- **HCI Designs in Educational Settings:** Explorations of user interface design issues specific to educational settings.
- **Interaction Technology and Techniques:** New input/output devices and techniques, and exploration of existing devices and techniques.
- **Interface Components and Designs:** Exploration of interaction styles, metaphors, and graphic elements that support the interface.
- **Legal and Standards Issues:** Patent and copyright issues, proposed standards for user interaction, and evaluations of existing standards.
- **Models of the user:** Models of user learning and user performance, mental models of system behavior, and studies of how these models can be used to improve interfaces.
- **Organizational Context:** Understanding how HCI design and implementation fits into the organizations that use and develop interfaces.
- **Other Areas :** Additional topics of relevance to the HCI community. Prior approval from professor is required. Submit requests in writing (via email) to the professor.

Project Type

One of the following project types is acceptable for this course:

1. Exploratory discussion on a topic. An extensive examination of a problem through literature review of an HCI issue. Provide specific research questions that form the conceptual basis for the paper. Make recommendations for potential dissertation research in the area. (Most students select this project type.)
2. Evaluation: Conduct an extensive usability evaluation using various usability methods. Evaluate a single system or evaluate and compare two or more similar application products. (May require additional IRB approval depending on level of participant involvement.) (This project cannot be the same evaluation as in DCTE 720, Assignment #3.)

Note: Other project formats may be acceptable but must be pre-approved by the professor. Examples: Report the current state-of-the-art of prototyping tools or outline a strategy for initiating participatory design activities in your company. The idea paper is the deliverable that will help the professor determine the suitability of the topic for the project. Students are to submit the idea paper through WebCT, not email.

All project types require EXTENSIVE literature synthesis and review to produce a paper of publishable quality.

Basic Project Preparation Outline (This is an outline to serve as an initial guide and is not inclusive of the Dissertation Guide!) Required for idea paper (IP), proposal (P), and final report (FRPT) where indicated.

Follow the form and style rules in the Dissertation Guide! (IP, P, FRPT). This is important because each chapter has specific things that must be addressed in the paper.

Write in third person narrative. (IP, P, FRPT)

Title page: The title of your paper, your name and username, the course number, and date. (IP,P, FRPT)

Table of Contents: (IP, P, FRPT)

Abstract: A short description of the paper. (IP, P, FRPT).

Keywords: Key terms searchable in online databases that are related to your paper. (IP, P, FRPT).

Chapter 1: Introduction. Includes a clear and compelling problem statement with literature substantiation, and with a description of the significance of your project to the HCI area of study. Present one or more research questions that will help you organize the conceptual framework for the paper. (IP, P, FRPT).

Chapter 2: Literature Review. This is a discussion of the current literature relating to your topic. Note: In the Idea Paper, you will only provide a maximum of five references to show you have already located some literature to help you focus on the topic. In the Proposal, you will provide a brief start of the literature review therefore your Reference List should begin to grow here. The Final Report should include at least 20-30 references in your literature review and Reference List. Preferably, these references should come from peer-reviewed academic journals and academic texts. Limit your use of magazine articles or web site sources as they are often non-refereed and contain low-level information. Web site citations should be kept to a minimum, unless cites come from respected HCI sources. Scholarly texts on HCI are acceptable, too, but such should be balanced with current research article sources. (IP, P, FRPT).

Chapter 3: Methodology. This section is only applicable if you are conducting a usability evaluation. (You will not have a Chapter 3 if you are doing an exploratory paper on a topic!!) This chapter describes the exact details and approach to the project, including the selection of subjects, procedures, experimental tasks, comparison/evaluation instruments, etc. Note that the methodology chapter is written in the future tense in the proposal and in the past tense in the final report. Important! If you have selected project option #1 (writing an exploratory paper), you will NOT have a methodology section!!! (P, FRPT).

Chapter 4. Results. This is only applicable if you are conducting a usability evaluation. Provide narrative and tabular (if appropriate) results of your study. (FRPT).

Chapter 5: Conclusions. This chapter presents conclusions and interpretations of results and relates conclusions to findings in the literature. *Recommendations should be made that clearly describe areas that appear promising for future research.* (This is important for ALL project types.) (FRPT).

Reference List: All sources used in researching and writing your paper. (IP, P, FRPT).

Back Matter: Appendices, large statistical tables, questionnaires, example screens, etc. (P, FRPT as appropriate).

Note to the student: You are requested to follow the five-chapter model (e.g., as presented in the Dissertation Guide) to organize your paper as much as possible. However, the five-chapter model may not fit all project types. For instance, if you are writing an exploratory paper on an issue and will not be collecting data (in effect doing a study of some kind), then you need to organize your paper in sections so that the flow of the paper is organized and easy to follow.