

**Master Course Syllabus**  
School of Engineering and Computer Science  
Washington State University Vancouver

**CS 443**  
**Human-Computer Interaction**  
3 Credits

**Catalog Description**

Introduction to the field of human-computer interaction; understanding the system user; user-centered design and evaluation techniques including heuristic evaluation and usability testing.

**Prerequisite Courses**

Junior standing

**Prerequisite Topics**

- Ability to understand design principles and how they apply to real-world applications
- Strong writing and oral communication skills

**Measured Course Outcomes**

Students taking this course will:

1. Carry out the design and development process to satisfy project requirements for a computer program or system in terms of user-centered design (*Contributes to performance criterion C-2*)
2. Design and execute a test plan to verify the usability of a GUI design (*Contributes to performance criterion C-4*)
3. Deliver a well-organized, logical oral presentation, including good explanations when questioned (*Contributes to performance criterion F-2*)
4. Find, evaluate and use resources to learn new materials not taught in class (*Contributes to performance criterion H-1*)

**Required Textbooks**

Interaction Design: Beyond Human-Computer Interaction; Jennifer Preece, Yvonne Rogers, and Helen Sharp, Wiley and Son, Inc. 2002, ISBN: 0-471-49278-7.

**Reference Material**

None

## **Major Topics Covered in the Course**

1. Psychological aspects pertaining to user-interface design
2. Design principles
3. Evaluation techniques
4. User-centered design

## **Laboratory Projects**

<u>Project Area</u>	<u>Weeks</u>
Graphical user interface concept development, prototyping and usability evaluation	5

## **CSAB Category Content**

	FUNDAMENTAL	ADVANCED		FUNDAMENTAL	ADVANCED
Data Structures	0	0	Computer Organization and Architecture	0	0
Algorithm & Software Design	0	1	Concepts of Programming Languages	0	0

## **Oral and Written Communications**

Each student is required to present his or her interface-design semester project to the class for approximately 15 minutes. During this time, a demonstration of the designed and tested GUI prototype must be made. Students and the instructor will question the presenter about his/her design decisions. A comprehensive report is also required, and includes the design rationale and the results of interface testing based on knowledge learned throughout the semester.

## **Social and Ethical Issues**

The ethical treatment of test participants and the practice of debriefing test participants following testing are discussed. Sensitivity to social and individual differences is also discussed throughout the course, as it pertains to interface design.

## **Theoretical Content**

Topic	Hours
Principles of cognition and memory, mental models	4

## **Problem Analysis**

The instructor analyzes the usability and desirability of systems during class with input from the students. Additionally, system interfaces are presented and critiqued by both the students and the instructor using knowledge, principles, and theory learned in class. All assignments are designed to encourage the student to apply knowledge learned in class to system and interface design in the real world. The mid-term and final exams include material that must be analyzed and solved by the student with a design solution.

## **Solution Design**

This course requires approximately 6 assignments, some of which involve the student observing systems in the real world and determining if a more optimal solution is possible using methods learned in class.

The final semester project requires the students to design a user interface based on the specific needs and desires of a given user population, evaluate their system, and justify design decisions during a class presentation and in a written report.

## **CC2001**

This course provides coverage of topics in the following (hours listed are minimums):

HC1. Foundations of human-computer interaction [core]	4
HC2. Building a simple graphical user interface [core]	2
HC3. Human-centered software evaluation [elective]	3
HC4. Human-centered software development [elective]	2
HC5. Graphical user interface design [elective]	1

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