

Syllabus - IT 440: Human-Computer Interaction

Section 1 – Winter Semester 2008 – GCB 147

MWF 1:00 – 1:50 PM – Course Credits: 3

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VISION:

Graduates in computing are usually expected to have professional skills which can be put to work relatively quickly. This first course in HCI is intended to provide an adequate basis in IS and software design and implementation for user interfaces. There is content on both the issues and engineering process supporting user interfaces. This course also includes an appreciation of the importance of further subjects, as well as discussions of the phenomena and theories relative to HCI.

SCOPE:

IS440 stresses the importance of good interfaces and the relationship of user interface design to human-computer interaction. Other topics include: interface quality and methods of evaluation; interface design examples; dimensions of interface variability; dialogue genre; dialogue tools and techniques; user-centered design and task analysis; prototyping and the iterative design cycle; user interface implementation; prototyping tools and environments; I/O devices; basic computer graphics; color and sound.

TOPICS:

By taking courses in HCI, we expect students to have gained an understanding of the following:

- How HCI relates to other aspects of IS and software engineering, and that HCI requires additional design skills and knowledge.
- Basic skills and knowledge for user interface design and will understand some of the limitations of their knowledge. The basic knowledge will include the features of interaction styles and devices and their relationship to user characteristics.
- At least one development methodology and one toolkit for prototyping and implementing user interfaces, and awareness of other methods and tools that are available.
- The scope of issues affecting human-computer interaction
- The importance of the user interface to motivate the study of topics like HCI and user interfaces
- The impact of good and bad user interfaces
- The diversity of users and tasks (applications) and their impact on the design of user interfaces
- The limits of knowledge of individuals developing HCI systems
- The need to work with others, skilled in diverse areas such as software engineering, human factors, technical communication, statistics, graphic design, etc.
- Cost/benefit trade-offs in HCI design
- Different system development lifecycles including those particularly applicable to HCI systems (e.g., iterative design, implementation, evaluation, and prototyping)
- How HCI concerns can be incorporated into systems development lifecycles
- The need to evaluate system usability (e.g., someone will evaluate usability even if not the developer, and, in some cases, not evaluating constitutes professional misconduct)
- The existence of design, implementation, and evaluation tools for developers with diverse needs and technical expertise
- Information sources available on HCI

DISCUSSION:

This course stresses the importance of good interfaces and the relationship of user interface design to human-computer interaction. Other topics include: interface quality and methods of evaluation; interface design examples; dimensions of interface variability; dialogue genre; dialogue tools and techniques; user-centered design and task analysis; prototyping and the iterative design cycle; user interface implementation; prototyping tools and environments; I/O devices; basic computer graphics; color and sound.

OBJECTIVES - LEARNING OUTCOMES:

The major goals we believe to be important are:

1. HCI Definition: students can recognize and recall terminology, facts and principles. For example, students can define 'direct manipulation' and list some of its strengths and weaknesses as an interaction style.
2. HCI Concept Understanding: students can determine the relationships between specific instances and broader generalizations. For example, students can determine which parts of a system exhibit direct manipulation features and can explain why a change in the system produced different properties.
3. HCI Directed Application: students can use concepts and principles to explain, analyze and solve specific situations, often with the applicable concepts implicit in the setting. For example, students can redesign part of an interface to exhibit direct manipulation style and predict the likely effects of the change.
4. Realistic HCI Problem Solving: students can apply course content in coping with real life situations. These differ from directed applications by having less structured questions and issues, no direction as to which concepts will be applicable and a range of potentially acceptable answers. For example, students can design an interface for real tasks and users which incorporates direct manipulation in appropriate ways (and evaluate/defend their choices).

PREREQUISITES:

All students taking this course should:

- Be advanced undergraduate in IS or CS students.
- Have the ability to write clearly for a general audience.
- Have the experience and skills for working in teams.
- Have experience with different levels of computer support for the same task (e.g., use of a text editor vs. a word-processor for creating documents).
- Have some programming experience and considerable experience using computers. (CS201, IS240)
- Have a general knowledge of systems analysis and design. (IS307 or CS333)
- Have at least one course in applied statistics (Math 221).
- Pass IS400: ISA Exam

It is recommended (but not required) that students also have taken:

- Systems Development or Software Engineering (including design, implementation, testing, debugging and documentation) (IS409 or CS433)
- A course in psychology, preferably human information processing.

TEXT & RESOURCES:

- ❑ Rosson, M.B. & Carroll, J.M. 2002. *Usability Engineering: Scenario-Based Development of Human-Computer Interaction*, San Francisco, CA: Morgan Kaufmann. ISBN: 978-1-55860-712-5 ISBN10: 1-55860-712-9
- ❑ Norman, Donald A. 2002. *The Design of Everyday Things*, Basic Books. ISBN: 0-465-06710-7
- ❑ Various Handouts and Internet documents
- ❑ Blackboard will be used for providing course information, course announcements, additional reading, grades, and submitting homework using the DIGITAL DROPBOX.
- ❑ SOC Software: C-Panel, Microsoft Office, Project, Visio, and others as needed.

ASSIGNMENTS:

All assignments and due dates are posted on Blackboard and will be announced in class. Assignments and exams in the course are designed to increase, practice, demonstrate, and evaluate three key types of learning in relation to Systems Analysis & Design: (1) knowledge, (2) skills, and (3) abilities.

- ❑ Assignments designed to increase a student’s *knowledge* include In-Class, Reading, Issues Assignments as well as Quizzes & Exams.
- ❑ Assignments designed to increase a student’s *skills* include In-Class and Skills Assignments.
- ❑ Assignments designed to increase a student’s *abilities* include Practice and Project Assignments.
- ❑ Exams are designed to give the opportunity for students to demonstrate, and be evaluated on, their knowledge, skills, and abilities. The types of exams in this course include multiple choice-short answer quizzes and projects.

The actual number of assignments and the dates the assignments depend on the progress of the class during the semester. Please pay attention in class and check Blackboard regularly.

**TENTATIVE SEMESTER SCHEDULE:
(Subject to Change)**

Week	Chapters Covered
1: Jan 2, 4	Syllabus, 1
2: Jan 7, 9, 11	2
3: Jan 14, 16, 18	3
4: Jan 21, 23, 25	4
5: Jan 28, 30, Feb 1	4
6: Feb 4, 6, 8	5
7: Feb 11, 13, 15	5
8: Feb 18, 20, 22	Review
9: Feb 25, 27, 29	6
10: Mar 3, 5, 7	7
11: Mar 10, 12, 14	7
12: Mar 17, 19, 21	8
13: Mar 24, 26, 28	9
14: Mar 31, Apr 2, 4	10
15: Apr 7, 9, 11	As Needed
16: Apr 14, 16	As Needed
17: Apr 21, 3-6pm	Final Project Due

FINAL EXAM & FINAL PROJECT:

Our Final Exam Time is scheduled for Monday, April 21st from 3-6pm.

- The Final Project Must be Completed before 4pm on Monday, April 21st. **There will be no late projects accepted.** Only in extreme cases, with a doctors note or similar evidence stating you cannot complete the project on time, will someone be allowed to turn in the Final Project at a later time. Please plan your work ahead of time – your final project will not be able to be completed in a day if left to the last minute.
- This time may be used for you to take the final exam – this will be determined later. If a specific class conflicts with the ISA Final Exam date & time, please tell the instructor.

SUBMITTING ASSIGNMENTS:

All assignments must be submitted in paper within the first 10 minutes of class on the date they are due.

ONLY PAPER COPIES OF THE ASSIGNMENTS WILL BE GRADED.

- You are also required to submit an electronic copy of assignments using the DIGITAL DROPBOX on Blackboard on the day the assignment is due. I will not accept emailed assignments or electronically submitted assignments as either on-time or late.
- If your assignment is not turned in within the first 10 minutes of class but are turned in the same day will be penalized 50%. Papers turned in the next day or later will be given a zero and can't be redone. However, we will grade the assignment for feedback if you desire.
- No excuses will be accepted for late assignments without external evidence, such as a doctor's note saying you were too sick to complete the assignment on time. The network being down or the printer not being available in class or in the lab is NOT considered a good excuse unless the quiz must be completed online. Please plan ahead, print the assignment at home or earlier in the day, and do not leave the printing of the assignment to the last minute just before it is due.

REDOs:

I allow students to REDO any assignments except Quizzes, Exams, and Final Projects. I will not erase a poor grade, but by REDO-ing portions of assignments that you did not do correctly will give you an additional 50% of the possible points for the portion of the assignment that was corrected. For example, If you got 2 of 4 points on a problem and you redid the problem, you would get an additional point (thus 3 of 4 possible points). In this way, the student can help offset the full effects of poor grades on assignments. ***You will only be allowed to REDO assignments if you have turned in the original assignment on-time.*** Late assignments are may not be redone.

GRADING of ASSIGNMENTS:

My approach to grading is designed to mimic, as much as possible, evaluations of the performance you will experience when working in the business world. In the real-world, points or percentages are not assigned by your bosses when you turn in an assignment. In the real world, you will be evaluated on:

- (1) **Meeting the Criteria Asked for** – Whether you accomplished the task criteria that were assigned.
- (2) **The Quality of Your Work** – How well you answers the questions.
- (3) **The Format of Your Document** - Whether you formatted your documents as assigned/asked.

If you do not meet the criteria or do not do quality work, in the real-world you are usually asked to **REDO** the assignment. Therefore, I give students the opportunity to redo assignments that they don't like their grade.

Nevertheless, the university requires that faculty create a way to delineate different grades for each student. Therefore, problem, question, or criteria will receive a multiple of 4 points representing the following evaluation:

- A **PLUS (+)** means you both met the criteria being evaluated and you met that criteria in a high quality way. This is equivalent to an “A” grade (4.0) on that specific problem, question, or criteria.

- ❑ A **CHECK** (✓) means you satisfactorily met the criteria. Quality was good, but could have been better. This is equivalent to an “B” grade (3.0) on that specific problem, question, or criteria.
- ❑ A **MINUS** (-) means you attempted but did not meet the criteria expected. As a result, the quality was also low. This is equivalent to an “C” grade (2.0) on that specific problem, question, or criteria. (REDO-ing the specific criteria that received a ZERO is recommended.)
- ❑ A **ZERO** (0) means you either did not meet the criteria at all, or you did not attempt to meet the criteria requested. This is equivalent to an “F” grade (0.0) on that specific problem, question, or criteria. (REDO-ing the specific criteria that received a ZERO is recommended.)

COURSE GRADE DETERMINATION:

The total points you receive on an assignment is a total of your points you receive on each criteria of the assignment. Your total grade for the class will be determined by weighting all the assignments. Final grades in the course will be determined approximately 40% by assignment grades, 25% by quizzes & mid-term exam grades, and 35% by your Semester Projects (including Planning and Analysis Project Documents, Models, Formatting, and Team member evaluations (if team projects are assigned)).

A 93-100% / 3.7-4.0	B+ 87-90% / 3.3-3.5	C+ 77-80% / 2.5-2.7	D Below 70% / 1.7
A- 90-93% / 3.5-3.7	B 83-87% / 3.0-3.3	C 73-77% / 2.0-2.5	F Below 60% / 1.0
	B- 80-83% / 2.7-3.0	C- 70-73% / 1.7-2.0	

C- or D Grades will be considered a failing grade: You must retake the class if you score less than a 2.0 grade average in this class. This class is an important foundation class of the IS major and for IS work in the real world. Therefore, you will have to retake the course if your final grade is less than 2.0.

Incomplete Grades: In deciding to give an incomplete grade, the policy of the university will be strictly enforced. This means that an incomplete will only be given in rare and extreme circumstances that are out of control of the students and that does not permit the student to complete the work of the course. This also means that a student signing up for “too many” courses or having “too much work” in other courses to successfully complete this course will not be considered a reasonable justification for requesting an incomplete. This also means that “forgetting” to register for a required course for graduation that then makes it impossible to graduate without adding the course as an independent study course will also not be considered for an incomplete grade. Students are expected to know their limitations, capabilities, and course requirements, and be responsible for either performing well enough to graduate or stay in school long enough to fulfill the requirements to graduate honorably.

Unofficial Withdrawals & Failing Grades: Students who register to take the course and do not officially withdraw from the course, yet fail to complete the course will be given an unofficial withdrawal (not a failing grade). Failing grades will only be given for students who complete the course.

ACADEMIC HONESTY:

By attending this course and this university you have agreed to live the honor code yourself and expect the same of others (See <http://w2.byuh.edu/studentlife/honorcode/docs/ces.htm#1>). Violations of Academic Honesty, the Dress and Grooming Standards, Disruptive Behavior Policy of this university will not be tolerated in this course. Violators will be subject to the appropriate discipline and possibly receive a UW or Failing grade in the course.

PREVENTING SEXUAL HARASSMENT:

Title IX of the education amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds, including Federal loans and grants. Title IX also covers student-to-student sexual harassment. If you encounter unlawful sexual harassment or gender-based discrimination, please contact the Human Resource Service at **780-8875** (24 hours).

STUDENTS WITH DISABILITIES:

Brigham Young University-Hawai'i is committed to providing a working and learning atmosphere, which reasonably accommodates qualified person with disabilities. If you have any disability that may impair your ability to complete this course successfully, please contact the students with Special Need **Counselor Leilani Auna** at **293-3999 or 293-3518**. Reasonable academic accommodations are reviewed for all students who have qualified documented disabilities. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures. You should contact the Human Resource Services at **780-8875**.