IST 385, Human Computer Interaction
Fall semester, 2010

Missouri University of Science and Technology
Department of Business and Information Technology

COURSE:

Course Prefix, Number, and Title:	IST 385, Human Computer Interaction
Meeting time:	Tuesday/Thursday, 12:30 – 1:45 p.m.
Location:	Fulton 107A
Course URL:	http://blackboard.mst.edu/

(*Please check blackboard regularly for announcements!*)

INSTRUCTOR INFORMATION:

Name:	Carla Bates
Webpage:	http://web.mst.edu/~carla
E-mail:	carla@mst.edu
Office:	101 Computer Science
Office Phone:	573-341-6078
Office Hours:	2-4pm Monday, 10-11am Tuesday, 2-4pm Thursday (or by appt)
	Note: I will not be in the office Wednesday afternoons.

COURSE INFORMATION

Catalog Description:
Introduction to the field of Human-Computer Interaction (HCI). Students examine issues and challenges related to the interaction between people and technology. The class explores the social and cognitive characteristics of people who use information systems. Students learn techniques for understanding user needs, interface prototyping, and interface evaluation.

Extended Description:
Technology has become an important part of our daily lives. Each day, we interact with different types of technologies one way or another. As future designers, developers, and system analysts, you are expected to understand fundamental concepts and principles of Human-Computer Interaction in order to develop a system that is useful and easy to use.

This course is designed to familiarize the students with various concepts and techniques for understanding user needs, interface design and prototyping, and interface evaluation. Major topics to be covered in this course include: human aspects of HCI, interface aspects of HCI, interaction aspects of HCI, data gathering and analysis tools for understanding user requirements, design/prototyping, and various evaluation techniques.

Course Prerequisites:
Psych 50

Course Materials:

- Required:
  - Preece, Jennifer, Rogers, Yvonne. and Sharp, Helen. 2007. *Interaction Design: Beyond Human-Computer Interaction*. 2nd Edition, John Wiley and Sons
  - Additional readings will be made available in the class

- Reference texts:
  - Shneiderman, B., and Plaisant, C., 2010, Designing the User Interface: Strategies for Effective Human-Computer Interaction, 5th Edition, Addison Wesley
  - Norman, D., 2004, Emotional Design: Why we love (or hate) everyday things

Instructional Methods:

This course involves lectures, interface evaluations, group project, exam, presentations, and various in-class activities.

Course Learning Objectives:

Course Objectives	Program Learning Objectives			
	Communication Skills	Critical Thinking	Information Technology	Teamwork & Leadership
Understand the importance of a good interface	X		X	
Understand multi-disciplinary nature of HCI		X		
Understand fundamental theories and models associated with HCI		X		
Be able to follow user-centered approach in designing	X	X	X	X
Be familiar with various designing and evaluating techniques	X	X	X	X

COURSE ASSIGNMENTS

1) Interface Evaluations (Individual Activity)

You will be asked to conduct a series of interface evaluations throughout the semester, both on good interfaces and bad interfaces. For each evaluation, you can choose any interface that is of interest to you. You can choose a web site, computer software, or the interface of everyday objects, such as elevator control panel, digital alarm clock, or your remote control.

For each interface evaluation, you are required to submit a report to summarize your findings. Although the detailed requirements for each assignment may differ, your report should always include the following:

- Description of the interface, e.g., using graphics, photographs, sketches etc. to explain the interface.
- The evaluation of the interface. Early assignments will focus on your own experience or general user's perspective. As the class progresses, later assignments will require you to evaluate the interface from a more theoretical perspective.
- Recommendations and implications (e.g., how to improve the interface, lessons learned from the design)
- Conclusion

2) <u>HCI article summary (Individual Activity)</u>

HCI is a new and exciting discipline. Every day, there are new developments which may change the way we think in terms of HCI. There are new discoveries from HCI research which improve our understanding on how humans interact with various interfaces. Therefore, students are encouraged to explore HCI topics that are of interest to you, find relevant articles, synthesize the articles, and share the key findings with the class. Detailed list of topics and resources will be provided in the class.

3) <u>Usability Project (Group Activity)</u>

One of the goals of this course is to provide students with hands-on experience on HCI issues. A project is an extremely useful way of providing this experience. The project requires students to work in teams. Each team can have *4-5 students.*

Each group will be required to gather user requirements from the user group(s), design the user interface and develop prototype(s), and evaluate the prototype. This process can be iterative.

The project includes four major components:

a) *Choosing the project*
Among the interfaces that have been chosen for the bad interface evaluations in your group, you can pick one interface that is most relevant and of interest to your entire group or you can choose a new interface. Write a brief project proposal to explain the project background, deliverables, and timeline.

b) *Identifying users and gathering user requirements*
At this stage, you need to identify your user group(s) and describe the users' characteristics. Then you can gather user requirements using various techniques discussed in the class.

c) *Prototyping*
You will develop prototype(s) for the project based on your users' requirements. You may use any computer software or programming language that you are comfortable with for this

assignment. Some software will be introduced in the class and you are encouraged to try them in your project.

d) Evaluation
To evaluate the effectiveness of your design, you will be expected to conduct some initial evaluations on your prototype. Of course, you can also start the project with evaluating an existing interface, design a prototype to improve the interface, and evaluate the improved design in comparison with the original design.

Each group will be given about **30-45 minutes** to present their project in the class. Each group is also responsible for answering any questions the professor or the other students may have. If your group is not presenting, you are still required to attend class. Classmates that are not presenting are required to give feedback to the groups that are presenting.

To prevent free riding in the group, peer evaluations will be conducted. Your participation and contribution in the group project will be evaluated by your team members. Your evaluation is confidential. No one will look at your peer evaluation except the professor. Grades will be assigned to individual members in the group based on the peer evaluations. *It is, therefore, very important that you contribute your share of time and effort in the group project (which includes attending the group meetings, contributing your ideas, etc.).*

4) Peer Constructive Feedback:
Use the form provided to give constructive feedback to your classmates when there are presentations in class.

5)   Exams (Individual Activity)
There will be two exams in this class. The exams will cover materials from the assigned readings, class lecture, and in-class discussions. The format of the exams will be true/false, multiple-choice, and short-essay questions.

6)   Class Participation (Individual/Group Activity)
Your participation is essential for the success of this class. There will be a subjective evaluation on your participation in class activities.

Attendance will be monitored. Each absence will be interpreted as an unprepared class and will be recorded as a zero for that day's class participation. For full points for that day's class participation, you also need to participate in the day's discussion. For distance students, if you are unable to attend class live, for the full participation points, you will need to view the video and email me a question, comment, or some other kind of feedback about the class before the next class period.

Students are also required to utilize the discussion board on course related topics. *A topic will be posted weekly on the blackboard*. You should post either thoughts/ideas on the discussions form or answer/respond to the questions/comments others have posted. (I agree, as a response does not constitute as participant unless you expound on why you feel that way.)

COURSE EVALUATION AND GRADING

Evaluation Methods:

1. Homework assignments   60 points

    a. Interface evaluations (10 points each)   30 points
    b. HCI article summary   10 points
    c. HCI article presentation   10 points
    d. Constructive feedback for article presentations   5 points
    e. Constructive feedback for project presentations   5 points

2. Group Project   200 points
    a. Project proposal   10
    b. Project update   10
    c. Project presentation   100
    d. Project report   80
    e. Peer evaluation   weighted into final grade

3. Exam I   100 points
4. Exam II   100 points

5. Participation   40 points
    a. Class attendance/participation   20 points
    b. Discussion forum   20 points

    Total   **500 points**

Grading Scale:
Letter grades will be assigned to the students only at the end of the semester.

Missouri S&T's Graduate Catalog states that grades of "A", "B", "C" are passing. The Undergraduate Catalog states that grades of "A", "B", "C", "D" are passing. There is specifically no mention in either catalog of numerical scores associated with these letter grades. Consequently, there are no pre-defined numerical boundaries that determine final letter grades. However, if a student achieves the following percentages, he/she is guaranteed the appropriate letter grade.

- A – 90% (450 points and above)
- B – 80% (400 points and above)
- C – 70% (350 points and above)
- D – 60% (300 points and above) *Note: Graduate students can not earn a D*

COURSE POLICIES

1) Late Work Policy
Assignments are due **at the beginning** of the class or as indicated. *Late work will not be accepted unless it is under exceptional circumstances (e.g., documented illness)*. The acceptance of late work is at the discretion of the professor.

2) Classroom Attendance/Participations
Disruptive behaviors will not be tolerated in this class. Turn off all audible alerts before class. If one goes off during class, that student must leave for the rest of that class. If there is an exam that period, the student will not be able to complete the exam.

If a student does not come to class for the first week, the student may be dropped by the professor. If a student misses up to three classes, the student will receive a warning via Academic Alert System (see point 3 for details). In the rare cases where a student misses five or more classes without approval from the professor, he/she may be dropped from the course for unsatisfactory performance.

3) Academic Alert System: http://academicalert.mst.edu
All faculty are encouraged to utilize the online Academic Alert System. The purpose of the Academic Alert System is to improve the overall academic success of students by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and informing students of actions necessary by them in order to meet the academic requirements in their courses.

4) Academic Dishonesty: http://registrar.mst.edu/academicregs/index.html
Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage. Additional guidance for faculty, including the University's Academic Dishonesty Procedures, is available on-line at http://ugs.mst.edu .

5) Classroom Egress Maps:
Faculty should explain where the classroom emergency exits are located. Please include a statement in your course syllabus asking the students to familiarize themselves with the classroom egress maps posted on-line at: http://registrar.mst.edu/links/egress.html.

6) Disability Support Services: http://dss.mst.edu
Any student inquiring about academic accommodations because of a disability should be referred to Disability Support Services so that appropriate and reasonable accommodative services can be determined and recommended. Disability Support Services is located in 204 Norwood Hall. Their phone number is 341-4211 and their email is dss@mst.edu. Instructors may consider including the following statement on their course syllabus as a means of informing students about the services offered:

"If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation."

7) LEAD Learning Assistance http://lead.mst.edu
The Learning Enhancement Across Disciplines Program (LEAD) sponsors free learning assistance in a wide range of courses for students who wish to increase their understanding, improve their skills, and validate their mastery of concepts and content in order to achieve their full potential. LEAD assistance starts no later than the third week of classes. Check out the online schedule at http://lead.mst.edu/assist, using zoom buttons to enlarge the view. Look to see what courses you are taking have collaborative LEAD learning centers (bottom half of schedule) and/or Individualized LEAD tutoring (top half of the schedule). For more information, contact the LEAD office at 341-4608 or email lead@mst.edu.

IST 385, Human Computer Interaction
Fall semester, 2010

COURSE OUTLINE (Tentative)

Week 1:
Aug 24   **Introduction and overview**
Aug 26   **Why HCI?**
- Readings: Chapter 1 & 9

Week 2:
Aug 31   *Assignment 1 Due: Interface evaluation I*
               What is HCI?
- Readings: Chapter 1 & 9

Sept 2   **Understanding Users**
- Readings: Chapter 3

Week 3:
Sept 7   *Assignment 2 Due: Interface evaluation II*
               Affective aspects
- Readings: Chapter 5
- Exercise: Designing error messages

Sept 9   ==**Usability lab – BOM 311**==
Week 4:
Sept 14   **Gathering user requirements**
- Readings: Chapter 10
- Exercise: Developing a persona for your user(s)

Sept 16   **Data gathering techniques**
- Readings: Chapter 7

Week 5:
Sept 21   *Assignment 3 Due: Project proposal*
               HCI article chosen
               ==Guest lecture==
Sept 23   **Conceptualization interaction**
- Readings: Chapter 2

Week 6:
Sept 28   *Assignment 4 Due: HCI article written summary*
               Assignment 5: HCI article presentation in coming weeks
               Data gathering – continued
- Readings: Chapter 8
Activities: HCI article presentation
Sept 30   **Interfaces**
- Readings: Chapter 6
Activities: HCI article presentation

Week 7:
Oct 5   **Exam I**
Activities: HCI article presentation

IST 385, Human Computer Interaction
Fall semester, 2010

Oct 7   <mark>Guest lecture</mark>
Week 8:
Oct 12   **Prototyping (Low–fidelity)**
- Readings: Chapter 11
- Exercises: Card-sorting, Denim

Activities: HCI article presentation
Oct 14   **Prototyping (High–fidelity)**
- Chapter 11

Week 9:
Oct 19   *Assignment 6 Due: Interface evaluation III*
                       Evaluation
- Readings: Chapter 13 & 14

Activities: HCI article presentation
Oct 21   **Evaluation – continued**
- Readings: Chapter 15

Activities: HCI article presentation
Week 10:
Oct 26   Activities: HCI article presentation
Oct 28   Activities: HCI article presentation
Week 11:
Nov 2   Activities: HCI article presentation
Nov 4   **The future of HCI**
- Readings: readings will be posted on the blackboard

Activities: HCI article presentation
Week 12:
Nov 9   **Exam II**
Nov 11   *Assignment 7: Group presentations this week and following weeks*
                       Group project presentations

Week 13:
Nov 16   **Group project presentations**
Nov 18   **Group project presentations**

Week 14:
Nov 23   **Thanksgiving Break!**
Nov 25   **Thanksgiving Break!**

Week 15:
Nov 30   **Group project presentations**
Dec 2   **Group project presentations**

Week 16:
Dec 7   **Group project presentations**
Dec 9   **Group project presentations**

Week 17:
Dec 14   *Assignment 8 & 9 Due: Group project report and peer evaluations due!*
                       Group project presentations (if needed)