IE 572 Design and Evaluation of Human-Computer Interaction
Syllabus, Spring 2017

Course Catalog Description
Design and Evaluation of Human-Computer Interaction. (3-0) Cr. 3. Alt. F. Human factors methods applied to interface design, prototyping, and evaluation. Concepts related to understanding user characteristics, usability analysis, methods and techniques for design and evaluation of the interface. The evaluation and design of the information presentation characteristics of a wide variety of interfaces: web sites (e-commerce), computer games, information presentation systems (cockpits, instrumentation, etc.), and desktop virtual reality.

Prerequisite
I E 577 or permission of instructor.

Instructor
Michael C. Dorneich, Ph.D.
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Phone: +1 515-294-8018
Office Hours: Monday 4:00-5:30 pm, Friday 8:00-9:30 am, or by appointment.

Textbooks

Dix, A., Finlay, J., Abowd, G. & Beale, R. (2004). *Human-Computer Interaction* (3rd Edition). New York: Prentice Hall.	Principal Text
Lewis, C. & Rieman, R. (1994). *Task-Centered User Interface Design: A Practical Introduction*. Available online at: http://hcibib.org/tcuid/	This is a shareware book for $5. We will use this book to guide the project
[OPTIONAL] Norman, D. (1988). *The Design of Everyday Things*. New York: Doubleday.	[OPTIONAL] For those that did not read it previously in IE577

Course Objectives
a. Students will be able to design and evaluate human-computer interaction systems utilizing key human factors concepts in a human-centered design process.
b. Students will be able to select and apply the appropriate methods and processes, trading off the constraints that engineers and designers typically face in the application of human factors to human-computer interaction systems.
c. Students will be able to apply quantitative and analytical techniques in the design of interaction systems in a variety of applications.

Relationship of Course to IE Program Outcomes

e) An ability to identify, formulate and solve engineering problems
j) Knowledge of contemporary issues
1) Be able to design, analyze, implement, and manage effective production and service systems

Blackboard

All students will have access to Blackboard (https://bb.its.iastate.edu) to see posted announcements, access course materials, turn in assignments and deliverables, and see grades.

Additionally, online students (only) will have access to the recorded lectures.

We will also use the Discussion Board for various online and full class activities.

Online Section

In-Class Activities

There are in-class activities that count as part of your participation score. Often these activities are done in teams (the same as your project teams). Online students will be assigned an equivalent activity that mirrors the activity done in class. This may require you to arrange a time to meet with your teammates, although some collaboration may be asynchronous. Depending on the activity, there are different reporting mechanisms (could be post to BB discussion group, could be a short narrated PowerPoint slide, etc.). The activity assignment will specify the reporting mechanism.

It is recommended that your team establish a weekly standing meeting, in order to work activities and/or the project. You can always cancel it if it is not needed.

Exam Proctoring

You are required to have a proctor to take your exams. Review the criteria for selecting a proctor located at: http://www.elo.iastate.edu/proctored-testing-guidelines-for-proctors/.

Once you have found a suitable proctor have that person/organization complete and submit the proctor approval form at: http://www.testing.las.iastate.edu/oc-proctor/application.

Your approved proctor will receive a notification via e-mail when your written exam is ready to be downloaded. Instructions on taking and returning the exam will be given to your proctor in the e-mail message.

Grading[1]

Grade Criteria

Scores in three major performance areas will determine the grades: *Individual Performance*, *Team Performance*, and *Team Maintenance*.

[1] This section adapted from Larry Michaelsen (2001), "Syllabus: Mgt. 4363 Organizational Behavior", *Team-Based-Learning Collaborative*. Downloaded from www.teambasedlearning.org January 2013.

Grade Weights

Areas of Performance	Grade Weights
1. **Individual Performance**	
Midterm Exam……..	20%
Final Exam……..	25%
Participation and Class Activities …….	5%
2. **Team Performance**	
Projects ……..	40%
3. **Team Maintenance (Peer Evaluation)**	
Peer Evaluation …….	10%
TOTAL	**100%**

Team Maintenance

Each individual will rate the contributions all of the other members of their teams. As team maintenance is such an important part of success in this class, the peer evaluation will be extensive, and will be given periodically throughout the semester.

The peer evaluation will consider the contribution to the team effort in all activities (in-class exercises, discussion, and projects). Students will fill out one peer evaluation sheet per person. Students only evaluate members of their team.

This is a required activity, and is part of your participation grade. Students will be judged on how professional, thoughtful, substantive, and constructive your comments are for all their team members.

Peer Evaluations will be kept confidential. The comments may be forwarded to the team members, but the author will not be identified. The scores will be shared only in aggregate.

Final Grade Calculations

When this procedure is followed the actual impact of any score on an individual student's final grade depends on either his or her actual score and also how high or low he or she scores relative to other members of the class. Thus, the conventional practice of 90% is an A, 80% is a B, etc. simply does **not** apply.

Class Schedule

Note: *Syllabus is subject to change by the instructor*
Note: *All deliverables due noon (Central time zone) via Blackboard unless otherwise noted*.
Key: HCI = *Human-Computer Interaction* textbook*;* TCUID = *Task-Centered User Interface Design: A Practical Introduction;* DOET = *The Design of Everyday Things;*

Week	#	Dates	Topics	Reading	Project Deliverables
1	1	1/10	Course Introduction & Project Overview		
	2	1/12	User-Centered Design & IRB	TCUID 1	
2		1/16, noon			Submit project pitch PPT Submit Skill survey
	3	1/17	Introduction & Project Pitches		-
	4	1/19	User Introduction Basics	HCI 5	
3		1/23, noon			Submit Teaming Summary Submit CITI Training Certificate
	5	1/24	Requirements: Contextual Inquiry	TCUID 2	
	6	1/26	Requirements: User & Task Analysis	HCI 15.1-15.3, 15.6-15.8	
4		1/30, noon			P1. Submit project proposals & Plan (10%)
	7	1/31	Human and Computer Abilities	HCI 1	
	8	2/2	Interaction	HCI 3.1, 3.2, 3.5, 3.7, 3.8 HCI 4	
5	9	2/7	Organizational Requirements	HCI 13	
	10	2/9	Usability Principles	HCI 7.1-7.2	
6		2/13, noon		DOET (review)	P2. Submit User & task descriptions (10%)
	11	2/14	Design Principals & Universal Design	TCUID 3 HCI 7.3-7.5, HCI 10.1-10.2	
	12	2/16	Design of Displays & Controls		
7		2/20, noon			P3. Submit paper prototype storyboards (10%)
	13	2/21	Cognitive Walkthrough	TCUID 4.1, HCI 9.1-9.3	
	14	2/23	GOMS & KLM Evaluation	TCUID 4.2, HCI 12.1, 12.2.1, 12.5.1	
8		2/27, noon			Submit CATME Peer Evaluation.
	15	2/28	Heuristic Evaluation	TCUID 4.3	
	16	3/2	Class Project Formative Evaluation		
9	17	3/7	MIDTERM		
	18	2/9	User Evaluation 1: Methods & Metrics	HCI 9.4.1	P4. Submit Non-user evaluation results & recommendations (20%)
		3/13 - 3/17	**SPRING BREAK**		
	19	3/21	User Evaluation 2: Observation & Query	TCUID 5.5, HCI 9.4.3-9.4.5	
	20	3/23	User Evaluation 3: Experimental Variables	HCI 9.4.2	

11		3/27, noon			P5. Submit design update (10%)
	21	3/28	User Evaluation 4: Experimental Design	TCUID 5.1-5.4, 5.6; HCI 9.5	
	22	3/30	User Evaluation 5: Processing Data	TCUID 5.7	
12		4/3, noon	-		Submit experiment plan PPT (on-campus) or video (online) + team form
	23	4/4	In-class Experimental Plan Review	-	
	24	4/6	Communication & Collaboration: Conversation	HCI 14.1-14.3	
13		4/10, noon	-		P6. Submit experimental plan (10%)
	25	4/11	Communication & Collaboration: Text-based & Group-based	HCI 14.4-14.6	
	26	4/13	Groupware	HCI 19.1-19.3	
14	27	4/18	Groupware	HCI 19.4-19.6	
	28	4/20	Guest Industry Lecture		
15, Dead Week		4/24, noon			P7. Submit project presentation slides (on-campus) or video (online) (10%)
	29	4/25	Project Presentations		
	30	4/27	Project Presentations		
16		5/1			P8. Submit Final Report (20%) Submit Peer Evaluations
		5/4	7:30-9:30 AM FINAL EXAM		

Course Requirements and Policies

Attendance

You are expected to attend all lecture classes. For the on-campus section, that means physically being in class. For the online students that means keeping current with the recorded lectures. There will be material that will be presented in class that is not in the readings. It is understood that sometimes you may have things that require you to miss class (interviews, plant trips, weddings, conferences, etc.). Please be professional and responsible and let the instructor know when you will be gone ahead of time, either verbally (in person or by phone), or through email. There won't be any make-ups, extensions, or special treatment for such activities (i.e. due dates will not be moved). You are still responsible for the missed material. Missing lecture multiple times may possibly affect your participation grade.

Assignments and Projects

Late assignments will not be accepted.

Use of electronic devices

Technology use in the classroom is intended to enhance the learning environment for all students. Electronic device includes cell phones (including smartphones), computers (laptops, notebooks, netbooks, and handhelds), mp3 and other digital audio and video players (including DVD players), and analog and digital audio and video recording devices (still and movie cameras).

Students are permitted to use computers for note-taking or academic purposes related to the class. Use of computers or related devices for reading email, surfing the web, or generally any other non-class related activities is prohibited.

Turn off cell phones in class. If you are waiting for an important call, please let the instructors know ahead of time, sit in back, set phone to vibrate, and take call outside of class. Repeated interruptions will affect your participation grade.

Grade Appeals

- Appeal of the grading of exams or quizzes must be done neatly word processed or typed. *E-mailed appeals are not acceptable*.
- The heading of the appeal must be in the following format (*Note*: Any memo without this complete information will be returned without action):

From:	Name
To:	(Example: Professor's name)
Date:	(Example: 9/27/2013)
Subject:	(Example: Exam 1 - 9/20/2013)

- Description of the appeal, including the problem or question number, if appropriate, must be composed in a concise, business-like memorandum. In addition, you are to solve the problem(s)/question(s) being appealed in the way that it was solved on the original exam or quiz and briefly explain why you made your original decision (this explanation is required to consider the appeal).
- Memos should be provided along with the original document that contains the appealed problem(s)/question(s).
- Memos must be delivered to instructor within one week of the exam being returned in order to be considered for re-grading
- Only people who appeal receive credit

Academic Honesty Statement

The IMSE Department has an expectation that all students will be honest in their actions and communications. Academic Misconduct in any form is in violation of *Iowa State University Student Disciplinary Regulations* and will not be tolerated. This includes, but is not limited to: copying or sharing answers on tests or assignments, plagiarism, and having someone else do your academic work. Individuals suspected of committing academic dishonesty will be directed to the Dean of Students Office as per University policy. For more information regarding Academic Misconduct see:

http://www.dso.iastate.edu/ja/academic/misconduct.html

Professionalism Statement

The IMSE Department has an expectation that all students will behave in a professional manner during all interactions with fellow students, faculty, and staff. Treating others with respect and having constructive communications are examples of being professional.

Student Disabilities or Special Accommodations
Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact Dr. Dorneich to set up a meeting within the first two weeks of the semester or as soon as you become aware of your need. Before meeting with Dr. Dorneich, you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office, located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-7220 or email disabilityresources@iastate.edu . Retroactive requests for accommodations will not be honored.

Dead Week
This class follows the Iowa State University Dead Week guidelines as outlined in http://catalog.iastate.edu/academiclife/gradingsystem/

Harassment and Discrimination
Iowa State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns about such behavior should contact his/her instructor, Student Assistance at 515-294-1020 or email dso-sas@iastate.edu, or the Office of Equal Opportunity and Compliance at 515-294-7612.

Religious Accommodation
If an academic or work requirement conflicts with your religious practices and/or observances, you may request reasonable accommodations. Your request must be in writing, and your instructor or supervisor will review the request. You or your instructor may also seek assistance from the Dean of Students Office or the Office of Equal Opportunity and Compliance.

Contact Information
If you are experiencing, or have experienced, a problem with any of the above issues, email academicissues@iastate.edu.