

MIE240F: Human Centred Systems Design - Fall, 2005

Syllabus

Course Objective

The objective of this class is to introduce the basic concepts of human factors and to establish the importance of considering human capabilities and limitations in the design of systems.

Instructor: Professor G. Jamieson

Office: RS 306

Office Hours: Thursday 14:00-15:00

Required Texts

- Wickens, Lee, Liu, & Gordon-Becker (2003). An Introduction to Human Factors Engineering (2nd Ed.)
- A coursepacket available at the UofT Bookstore

Reading

There are readings assigned for many lectures. Students are advised to complete the reading in advance of the corresponding lecture. The readings **will** include examinable material not disclosed by other means.

Lectures

Tuesday 9:10-10:00 BA1230

Thursday 10:10-11:00 BA1230

Friday 10:10-11:00 BA1230

The lectures **will** include examinable material not disclosed by other means.

Tutorials

You must attend the tutorial to which you have been assigned.

Section	Location	Time (Tuesday)	TA	email address
1	BA2185	10:10-12:00	Ryan	r.kilgore@utoronto.ca
2	BA2139	15:10-17:00	Nathan	nathan.lau@utoronto.ca

The tutorials **will** include examinable material not disclosed by other means. Case Studies should be read in advance of the tutorial so they can be discussed.

Course Communications

The course website is located at <http://ccnet.utoronto.ca/20059/mie240h1f/>. CCNet is used to record marks, post lecture materials, distribute readings and assignment instructions, conduct class surveys, and respond to questions. You are expected to visit the site on a regular basis. Questions of general interest to the class should be posted on the bulletin board and will be answered by the teaching staff. Personal questions or issues should be addressed through your TA. If your TA is unable to answer a question or resolve a problem, he or she will refer it to the instructor.

Notetaking

Taking notes from lectures and readings is each student's responsibility. Only you can judge the content and form of notes that works best for you. An optional set of lecture outlines will be posted on CCNet for most lectures.

Key Dates

Task analysis assignment due	October 4 th
Midterm Exam	October 27 th , 15:00-17:00, GB304
Prototyping assignment due	November 8 th
Usability assignment due	November 29 th
Last Lecture	December 2 nd
Final Exam: TBD	(some time between December 5 th and 16 th)

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Assignments

Breakdown of Marks

Midterm Exam 25%

Tutorial Assignments (3) 30%

Oral Presentation 10%

Final Exam 35%

Examinations

The midterm will include all lecture, tutorial, and reading material through October 21st. The final exam is comprehensive of all lecture, tutorial, and reading material from the course. Guest lectures and lecture aids (e.g., movies) are examinable.

You will be allowed to use only your personal handwritten notes on the midterm and final exams. This includes notes that you make on top of lecture outlines and graphics. The following will not be allowed as exam resources: textbooks (any), readings, notes or slides from previous versions of this course, or direct reproductions (e.g., photocopies, scans) of another person's notes. The use of any of these materials during an examination will be treated as a case of plagiarism.

Tutorial Assignments

Three equally weighted tutorial assignments will be completed in small groups. The purpose of these assignments is to give you experience in applying human factors methods to systems design. The assignment will be introduced in the tutorial and you will begin work on it with the aid of your TA. Assignments are comprised of analysis, design, or evaluation work described succinctly in a 5-7 page written report prepared by your group. Your TA will provide you with guidelines on appropriate report content for each assignment. Generally speaking, the report should describe the purpose of the work, detail the work itself, highlight what you learned from doing the work, and draw a connection between the work and course content.

Reports are to be submitted via TurnItIn.com by the start of your tutorial two weeks after they are assigned. Late reports will be penalized at a rate of 20% per day.

Oral Presentation

Each student will prepare and deliver one, 7-minute, individual oral presentation on one of the three tutorial assignments. These presentations will be made in tutorial on the same day that the corresponding assignment is due. Failure to deliver your report at your scheduled time will result in a score of 0. Failure to appear at any oral presentation tutorial in which you are not presenting will result in a deduction of 2 marks from your oral presentation score. Disrespectful audience behaviour may also result in penalties assessed against the offender's oral presentation mark.

MIE240 Lecture and Reading Schedule

Week	Date	Lecture Topic	Reading Assignment	Tutorial
1	8-Sep	Introduction to Human Centred Systems Design	Wickens Ch 1	
	9-Sep	Designs That Suck		
2	13-Sep	History of Human Factors	CCNet: Not a New Science	Show and Tell
	15-Sep	Design Process Overview	Wickens Ch 3 (30-39, 50-60)	
	16-Sep	Task Analysis	Wickens Ch 3 (38-49)	
3	20-Sep	Ergonomics at Microsoft (Hugh McLoone & Dan O'Neil)		Task Analysis
	22-Sep	Human Factors for Medical Devices (Andrea Cassano)		
	23-Sep	Requirements Generation & User Specifications		
4	27-Sep	Information Processing (Mark Chignell)	Wickens Ch 6	
	29-Sep	Information Processing (Mark Chignell)		No Tutorial (Midterm make-up)
	30-Sep	Decision Making (Paul Milgram)	Wickens Ch 7 (156-165)	
5	4-Oct	Talking Behind the Wheel (Allison Lamsdale)		Task Analysis Orals
	6-Oct	Decision Biases	Wickens Ch 7 (165-170, 177-183)	
	7-Oct	Maps of Bounded Rationality (Daniel Kahneman)		
6	11-Oct	Displays	Wickens Ch 8, 2 Case Studies	Case Studies: Silent
	13-Oct	Displays		Warning; In Search of the
	14-Oct	Controls	Wickens Ch 9 (218-231)	Lost Cord
7	18-Oct	Physiological Limitations - The Cardio-Pulmonary System	Wickens Ch 12, Case Study	Case Study: A River of
	20-Oct	Physiological Limitations - Everest: The Death Zone (Film)		One's Own
	21-Oct	Anthropometry (Paul White)	Wickens Ch 10	
8	25-Oct	Prototyping		Prototyping
	27-Oct	Design Concept Generation & Selection (Film: Deep Dive)	*** MIDTERM EXAM: 15:00-17:00 ***	
	28-Oct	Hueristic-based Design		
9	1-Nov	Military Applications of Human Factors (Jameel Adam)	Case Study	Case Study: Blind Spot
	3-Nov	Human Factors Design Resources		
	4-Nov	Human Error Classification	Wickens Ch 14 (366-369); Readings: To Err Is Human	
10	8-Nov	Accident Investigation (Leo Donati)		
	10-Nov	Human-Computer Interaction	Wickens Ch 15 (383-404)	Prototyping Orals
	11-Nov	Evaluation	Wickens Ch 15 (406-410), Readings: Usability Testing	
11	15-Nov	Software Usability Evaluation (Madhava Enros)		Usability Evaluation
	18-Nov			
	19-Nov	Sleep, Circadian Rhythms & Shiftwork	Wickens Ch 13 (329-350)	
12	22-Nov	Fatigue, Stress & Workload		Workload Measurement
	24-Nov	Automation	Wickens Ch 16 (418-433)	
	25-Nov	Social Issues	Wickens Ch 19	
13	29-Nov			Usability Evaluation Oral
	1-Dec	Training	Wickens Ch 18 (477-491)	
	2-Dec	A Practitioner's Tale (Gerard Torenvliet)		