DEPARTMENT OF COMPUTER SCIENCE
UNIVERSITY OF TORONTO

CSC 318

THE DESIGN OF INTERACTIVE COMPUTATIONAL MEDIA

Fall 2014

LECTURES

L0101 & L2001 Lectures weekly: Thursdays 1-3 pm in **UC179**

LECTURER

ILONA POSNER, User Experience Consultant & Lecturer, DCS
Contact: iposner @ cdf.toronto.edu
Office Hours: By Appointment only

TUTORIALS & TEACHING ASSISTANTS

Tutorials weekly: Thursdays 12-1 pm

UC179	Fiona Tran	fiona.tran@utoronto.ca
BA2155	Sophie Shuyuan Ma	shuyuan.ma@mail.utoronto.ca
BA3012	Samantha Halliday	s.halliday@mail.utoronto.ca

COURSE INFORMATION & COMMUNICATION

- **Blackboard** application will be used for all course information & communication. Login to Blackboard at https://portal.utoronto.ca/ using your UTORid & Password
- **Email** is the preferred method of communication with professor and TA's. Students should **NOT expect immediate email responses**. Attempts will be made to respond to emails in about 24 business hours.
- **NOTE**: The University & Blackboard communicate with students using **only university email addresses.** Please, make sure that your **ROSI email** is correctly set to your University email address, for example your.name@utoronto.ca or that you have created a **functioning forward** on this email address, to ensure **you do not miss important course related announcements.**

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COURSE DESCRIPTION

The focus of this course is on the **design of interactive computational media** that enhance and support the cognitive, communication, and creative processes of their users, and on user interface design for computational media. The text refers to all of this as *interaction design*.

Topics will include:

1. **Introduction**: Interactive computational media. Group processes, team building, team management.
2. **Design**: The user-centred iterative design of interactive systems. Design methodologies and principles. Metaphors and mental models. Multidisciplinary design: the role of the design disciplines and the behavioural sciences. Rapid prototyping and envisionment.
3. **Design process**: Requirements analysis, concept design, physical design, prototyping, evaluation.
4. **Understanding users, observation, and evaluation**: Interviews and questionnaires, observing users, testing users.
5. **Interactive media and modalities**: Typography, layout, colour, information display, input/output, interactive interfaces, and multimedia.
6. **Extended interface**: Training, documentation, error handling, and help; ergonomics, the physical environment, and interfaces for special needs.
7. **Research frontiers**: Possible topics include social networking, ubiquitous computing, mobile, and others.

COURSE OBJECTIVES

1. To introduce the student to key issues in interactive media design and user interface design.
2. To introduce the student to some of the research in these fields.
3. To stress the importance of good user interface design, acquaint the student with basic principles whereby this may be accomplished, and give the student experience in carrying this out.
4. To give the student concrete experience in:
   a. Conceiving of and designing novel computational media and their interfaces
   b. Thinking deeply about user needs
   c. Thinking critically about user interfaces
   d. Building effective prototypes of new computational media
   e. Working in multidisciplinary design teams
   f. Writing clear, understandable English descriptions of systems, interfaces, usability issues
   g. Verbalizing, articulating, and discussing concepts and issues
   h. Evaluation of designs with real users.
5. To prepare the students for further courses in related areas, such as CSC428, and for real-world software, systems, new media, and user interface design and evaluation.

THE PROJECT

There is NO EXAM in this course. Throughout the course the students will work, in **groups of 5 or less** on the course project to carry out the user-centered, iterative design of prototypes of computational tools appropriate to the needs of a specified user group. They will learn about the users, and conceive, design, prototype, and evaluate their designs.

The topic of the course project is "Appropriating Technologies for New Cultures." Details may be found at **http://chi2015.acm.org/authors/student-design-competition/** students will have the option of submitting their projects to the Student Design Competition at CHI 2015, in Seoul, South Korea.

DESIGN COMPETITION

We are fortunate to have **IBM Canada sponsor** our in-class Student Design Competition. On December 4 at 1:00 – 3:00 PM the top projects from each Tutorial will be presented to a professional panel of judges from IBM. The creators of the best class project will be invited to attend **job interviews** with IBM's HR department for the opportunity to get a job at IBM. The winning project(s) may be featured at the CASCON 2015 conference and possibly elsewhere.

COURSE DEADLINES

Week	Date	Individual Work Assignments & Group Work Phases (Due 12:00 Noon at start of Tutorial)	Individual Assignments %	Group Work Phases %
1	9/11/14			
2	9/18/14	A1: Part 1: Bio, Group Work, Problem Space Part 2: Example of Good or Bad design	2	
3	9/25/14	A2: Lit review on aspect of problem space Phase I: Group information, problem space, target audience, high-level research plan and	10	5
4	10/2/14	Phase II: Detailed research plan and Final research instruments		8
5	10/9/14	A3: Individual research results	10	
6	10/16/14	Phase III: Summary of research results and design guidelines		8
7	10/23/14	A4: Solution design - Paper prototype	10	
8	10/30/14			
9	11/6/14	Phase IV: Functional prototype & Usability Testing Evaluation Plan		8
10	11/13/14			
11	11/20/14	A5: Feedback on other group's prototypes	4	
12	11/27/14	Phase V: Presentation in Tutorial (5%), Final Functional Prototype (2%),		20
13	12/1/14	**DUE MON Dec 1** Project Paper (8%), Poster (5%)		
	12/4/14	**COMPETITION FINALS Dec 4 1:00 – 3:00**		
		Lecture participation	5	
		Tutorial participation	5	
		Group participation (confidential evaluation)	5	
		TOTALS	51	49

COURSE TEXTBOOK & READINGS

The course will use the textbook: *Interaction Design: Beyond Human-Computer Interaction, THIRD Edition*. Yvonne Rogers, Helen Sharp, & Jennifer Preece, (2011). John Wiley & Sons. (RSP) The textbook also has a very valuable web component at www.id-book.com filled with additional readings & resources.

Throughout the course readings will be assigned from the textbook & additional articles. Readings help you participate during Lectures and to do the course work. Readings should be done according to the assigned schedule. Doing assignments without readings will result in lower grades.

IMPORTANT DATES

Session classes begin Sept 8, 2014	First class Sept 11, 2014
Deadline add S courses	Sept 21, 2014
Deadline to drop S courses	November 3, 2014
November Break, No Classes	November 17-18, 2014
Classes end	Tuesday Dec 2, 2014
Makeup Monday Classes	Wednesday Dec 3, 2014
Study Break	Dec 4-5, 2014
csc318 Design Competition Finals	**Dec 4 1-3PM**
Final Exams	**NO EXAM in this class!**
OPTIONAL: CHI2015 SDC Submissions	January 5, 2015 8PM

IMPORTANT NOTES ABOUT ASSIGNMENTS & GRADES

Assignments: The course project is divided into a number of parts due regularly throughout the term**.**
Individual Assignments are combined into **Group Work Phases**. Individual assignments are to be submitted electronically at the specified times for review by TA's and other group members. Incorporation of feedback and improvements of original individual assignments drafts is an integral part of the learning process and is graded accordingly. Group components require analysis of individual work and their synthesis and integration into the larger group submission.

Due Dates: If an assignment is due "at 12:00 Noon" then after 12:10 the assignment is considered LATE.

Late Assignments: Late assignments loose 5% of total grade per calendar day, up to 8 days late.
Assignments more than 8 calendar days late, will not be marked and receive 0%
Late submissions must inform **>24 hrs before deadline** for special arrangements.

Remarking: Students requesting remarking of an assignment must do so in writing within 1 week after receiving the assignment. Requests must include detailed reason & contact info. **Please note,** assignments submitted for remarking will be remarked fully and **may result in lower grades.**

WRITTEN WORK

Your ability to conceive of, design, and implement new computational tools and new user interfaces that truly meet the needs of you target audience depends critically upon your ability to communicate with these users. This requires effective writing and speaking skills. All assignments will include substantial written work.

Structure and organization, spelling, grammar, word usage, and document appearance will count for roughly 10% of your grade on the written work**. If reports are not in satisfactory English prose, they will be returned for rewriting. If you need help, please consult your college writing lab.**

CLASS PARTICIPATION & STUDENT PHOTOGRAPHS

Class participation is important in this course. 15% of your grade will be determined by your participation at Lectures, Tutorials, and in Group work.

Your photograph will be used to identify you and assign your class and Tutorial participation grade. **Phase I** will include a submission of your groups' **digital photographs** and **participant details.** Please submit a **recognizable recent image of yourself,** showing your head & shoulders.

PROTOTYPING SOFTWARE

For prototyping the project you may use **your own computer**, and the software of your choice as long as you are absolutely certain that your prototype will be **viewable** on the Web from **any standard Web browser.** In the past students have used HTML, C++, Flash, Visual Basic, Dreamweaver and PowerPoint to create their interactive prototypes.

COURSE STAFF

Prof. ILONA POSNER is a User Experience Consultant with more than 25 years of experience in the area of Human Computer Interaction, working on design and evaluation of web sites, software, hardware, mobile applications and business strategies. She has worked for many clients such as AMD, Autodesk, Apple, CIBC, etc., as well as numerous startups. An experienced educator she has been teaching both university and professional development courses for over a decade. Her volunteering roles include Chair of Programming at ToRCHI.org and organizer of International Student Design Competitions at CHI and UPA conferences. She holds a Masters Degree in Computer Science from the University of Toronto. www.ilonaposner.com

Teaching Assistants

Samantha Halliday is a doctoral student researching DNA and protein sequence analysis techniques at the Hospital for Sick Children. Other professional interests include graphic design, data visualization, and improving workflows with scientific software. She has TAed a wide variety of courses at the University of Toronto over the past two years, with an emphasis towards hands-on teaching and helping students develop skills for intuiting good design and programming practice.

Shuyuan (Sophie) Ma is a Masters Student in the Department of Computer Science, and currently working on Side Effect Software as a software developer engineer (co-op) focusing on UI and UX problems of the product. She has extensive experience designing graphic components, making mock-ups, code implementations for desktop apps, mobile apps and websites.

Fiona Tran is a master's student in the Cognitive Engineering Laboratory within Industrial Engineering at U of T. Her research is in human factors for mobile devices in the process industries. She has a BASc in Engineering Science from U of T, specializing in Energy Systems Engineering. She has previously worked on front-end web development projects in the Dept. of Computer Science, Div. of Engineering Science, and Dept. of Chemical Engineering.

Advice about Academic Offences

Plagiarism http://www.cs.toronto.edu/~fpitt/documents/plagiarism.html
Code of Behaviour http://www.artsandscience.utoronto.ca/ofr/calendar/rules.htm