Faculty of Information  
University of Toronto

INF2169 User-Centred Information Systems Development  
KMD2001 Human-Centred Design

Winter 2016

Wednesdays 6:30-9:30pm  
Bissell Building, Room 313  
140 St. George St.

These course materials were designed by Professor Andrew Clements and adapted by the current instructor.

Instructor
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Teaching Assistant
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Calendar Descriptions

INF2169 User-Centred Information Systems Development
Theoretical and practical implications for a user-centred perspective on the development of computerized information systems. Topics include user participation, alternative development methodologies, end-user computing, prototyping techniques, computer-supported cooperative work. Emphasis on the development of systems at the workgroup level using common software packages.

KMD2001 Human-Centred Design
An approach to design grounded in understanding the real-world practices of users and user communities. Includes traditional design practices, visual literacy and the design science of human-computer interaction, graphics, and information visualization. Specific design practices include: ecological design, participatory design, user-centered design, contextual design, etc. A variety of qualitative and quantitative evaluation methodologies will be covered in the context of a usability engineering and user-centred approach.

Overview
This version of the course focuses on Participatory Design and aims to provide students with both theoretical foundations and practical experience in developing information systems/knowledge media that are driven by the needs and active participation of
prospective users. It will prepare students for collaborating with users in a variety of settings to develop their own systems/media. In contrast to conventional rationalistic approaches to information systems development (ISD), in this course information systems and knowledge media will be regarded as fundamentally social processes that can be supported by information/communication technologies. System/media design will be therefore be treated not primarily as an engineering problem requiring the application of formalized methodologies and abstract modelling techniques by technical experts. Rather, it views systems/media design as an on-going, multi-faceted process involving the balancing of contending social and technical opportunities and constraints requiring experience within the actual use context. While the implications of this approach will be discussed in the case of large scale, public or organization-wide systems/media, the main focus will be upon the development of small scale information systems and knowledge media applications with relatively well-defined and accessible user communities (e.g. at the work group level or with an identifiable membership cohort) using networked personal devices (laptops, tablets, smartphones) and popular software packages. This is currently the scene of rapid growth, largely without the benefit of appropriately participatory development techniques.

Course Outcomes
This course aims to enable students to:
1. Identify participatory design methods and their use in systems/media design
   a. Examine the relationship between human centred design and participatory design
   b. Conduct a review of participatory design literature
   c. Summarize research findings and relate these to course readings
   d. Identify the importance of including active user participation in knowledge media design
2. Assess participatory opportunities and obstacles in systems/media design/use settings
   a. Conduct a site review of existing and prospective systems/media
   b. Analyze and present findings of site reviews
   c. Lead class discussion on relevant readings
3. Design information systems/knowledge media using participatory methods
   a. Plan and organize a participatory prototyping project
   b. Apply the precepts of Participatory Design to a practical design project
   c. Plan and organize a systems/media design prototyping project
   d. Collaborate with others in a design project
   e. Present findings in a way that encourages insights and engagement

Expectations of Background
Since this course is designed to appeal to students across a variety of disciplinary and professional orientations, the class will reflect a very wide range of backgrounds in terms of training, experience, and career expectations. It is useful for students to have some exposure to developing web pages and working with popular presentation and prototyping software packages. See the Prototyping Resources page on Blackboard. In addition, students should have an aptitude or at least willingness for engaging and collaborating with others who don’t necessarily share similar perspectives, skills or interests. Beyond this, diversity of background
is welcome and will be an asset in group discussions and the project teams. If you have any questions about the suitability of your preparation, discuss this with the instructor.

**Evaluation**

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<thead>
<tr>
<th>Individual</th>
<th>Due</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Self Profile</td>
<td>20 January</td>
<td>5%</td>
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<tr>
<td>Literature Review</td>
<td>10 February</td>
<td>20%</td>
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<tr>
<th>Group</th>
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<tr>
<td>Site/App/Service Review</td>
<td>3 or 10 February</td>
<td>10%</td>
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<tr>
<td>Memorandum</td>
<td>3 February</td>
<td>5%</td>
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<tr>
<td>Interim Report</td>
<td>22 February</td>
<td>15%</td>
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<tr>
<td>Presentation</td>
<td>23 March- 6 April</td>
<td>15%</td>
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<tr>
<td>Final Report</td>
<td>8 April</td>
<td>30%</td>
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**Group Project Work**

A central feature of this course is a group project involving participatory design in a ‘live’ field site (as indicated above worth in aggregate 75% of the final grade). This means intense collaborative work throughout the term with a group of 4-6 classmates. This can offer among the most rewarding learning experiences you are likely to encounter in your graduate program.

**Texts**

All required readings are available either through the textbook, in the Inforum, or electronically through the library or the course website.

Required text:

Unless otherwise indicated, required readings will be from this text. Additional readings will available electronically via the course website on Blackboard.

The Participatory Design Portal [http://pdcproceedings.org] is an invaluable course resource. It provides free access to the Complete Archive of Participatory Design Conference (PDC) Proceedings, [http://ojs.ruc.dk/index.php/pdc/issue/archive], as well as other PD literature: [http://pdcproceedings.org/other_pdcresources.html]
Overview of Course Schedule

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<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture</th>
<th>Activity</th>
<th>Present/Hand In</th>
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<tbody>
<tr>
<td>1</td>
<td>13 January</td>
<td>Introduction</td>
<td>Site/App Critique</td>
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<tr>
<td>2</td>
<td>20 January</td>
<td>Engaging Users, Understanding Practices</td>
<td>Project Fair</td>
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<td>3</td>
<td>27 January</td>
<td>Envisioning Change</td>
<td>Envisionment Workshop, Team Formation</td>
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<td>4</td>
<td>3 February</td>
<td>Learning with Users</td>
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<td>Site Review Presentations, Memorandum</td>
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<td>5</td>
<td>10 February</td>
<td>Prototyping</td>
<td>Prototyping Exercise</td>
<td>Site Review Presentations, Literature Review</td>
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<td>6</td>
<td>17 February</td>
<td>Reading Week</td>
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<td>7</td>
<td>24 February</td>
<td></td>
<td>Interim Report Feedback</td>
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<td>8</td>
<td>2 March</td>
<td>PD in Community Settings</td>
<td>Literature Review, Feedback</td>
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<td>9</td>
<td>9 March</td>
<td>PD in Selected Settings</td>
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<td>10</td>
<td>16 March</td>
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<td>Coaching Sessions</td>
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<td>11</td>
<td>23 March</td>
<td>Innovations, Participation, and Artful Integration</td>
<td>Project Presentations</td>
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<td>12</td>
<td>30 March</td>
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<td>Project Presentations</td>
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<td>13</td>
<td>6 April</td>
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<td>Project Presentations</td>
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Detailed Course Schedule

Week 1 Course Introduction
Welcome, introductions, course aims, expectations.
Activity: Site/app critique

Week 2 Understanding Design, Designers and Users
This week we briefly review some history of participatory design, and relate this to the social and political contexts of design. We will look forward to the growing ubiquity of computing in everyday life and discuss concepts of “design in use”. We add to this mix the situated nature of technology as it is put into practice, and the inherent challenges and useful tensions created by the need for design and learning that works across difference. Questions to consider include: What constitutes the design project? Where does design start and end? Who is design for? Who gets to design? Who should be involved in the design process? How
does Participatory Design compare with User-Centred Design and related design perspectives?

Read:
Chapter 1: Participatory Design – An Introduction, Toni Robertson and Jesper Simonsen
Chapter 2: Heritage – Having a Say, Finn Kensing and Joan Greenbaum
Chapter 3: Design – Design Matters in Participatory Design, Liam Bannon and Pelle Ehn

Activity: Project Fair – guest presentations of prospective projects

Hand in: Self-profile

**Week 3 ** Envisioning Change Together

Guest lecturer: Terry Costantino, Usability Matters
The practical contingencies of cooperative design require a focused attention to the social contexts of work and technology. This week we focus on envisioning ways of transforming work or other practices while being grounded in a critical understanding current practices. We will discuss concepts relating to development phases, and operationalize these in a Future Workshop.

Read:
Chapter 6: Methods – Organizing principles and general guidelines for Participatory Design projects, Tone Bratteteig, Keld Bødker, Yvonne Dittrich, Preben Mogensen, and Jesper Simonsen
Chapter 7: Tools and Techniques – Ways to Engage Telling, Making and Enacting, Eva Brandt, Thomas Binder and Elizabeth Sanders

Activity:
Site/team formation exercise
Class exercise on Future/Envisionment Workshop

**Week 4 ** Learning with Users to Understand their Mediated Practices

This week we will continue our investigation of the themes of tacit knowledge, performance and mutual learning. We will look at “design as action” and how “technologies can be designed, consciously or unconsciously, to open certain social options and close others”. Technology is rooted in practice, and has precursors, preconditions, and histories that we may need to uncover as we realize that technology innovation and creation are part of an ongoing socio-technical process. Developing new technologies and work practices together require a nuanced understanding of existing practices, as performed and experienced by the practitioners themselves. This raises ethical and political questions about who is doing what to whom, and requires grounding through field methods, notably ethnography, that are sensitive to local conditions and individuals most directly involved.

Read:
Chapter 4: Ethics – Engagement, Representation and Politics-In-Action, Toni Robertson and Ina Wagner
Chapter 5: Ethnography – Positioning Ethnographic within Participatory Design, Jeanette Blomberg and Helena Karasti

Activity: Oral presentations of Site Reviews

Hand in: Team/Site confirmation memo

**Week 5 Prototyping Workshop**

Central to Participatory Design is the iterative development and testing in realistic use situations of provisional versions of the envisioned artifact – typically referred to as mockups or prototypes. This week features a workshop on cooperative prototyping and related participatory techniques. We will focus on how to create, evaluate and refine prototypes in light of experience with them. We consider an array of traditional and emerging methods: paper, wireframes, digital, personas with scenarios, bodystorming, placestorming, and the issue of fidelity in prototyping (high and low). We also discuss the blurred boundaries between prototyping and other ideation activities in design, as well as what makes for a ‘good’ prototype.

Read:

Activity:
Oral presentation of Site Reviews
Class exercise on Prototyping

**Week 6 Reading Week**

**Week 7 Project Feedback**

Hand In: Interim Report

**Week 8 PD in Community Settings**

While PD first developed in the context of relatively large workplaces and formal organisational information system settings, increasing participatory design approaches are also finding application in non-profit organizations and community settings (in person and distributed). This is in part because the values of PD resonate more directly in civil society than in private or public sector organizations. While there are important differences, such as in the relatively fewer financial and material resources available, or less intensive individual
use, many of the techniques can be adapted. This week we discuss some of the challenges facing PD in communities and explore ways to overcome them.

Read:
Chapter 8: Communities – Participatory Design For, With, and By Communities. Carl DiSalvo, Andrew Clement and Volkmar Pipek
Chapter 9: Global Fund for Women – Integrating Participatory Design into everyday work at a global non-profit. Randy Trigg and Karen Ishimaru

Activity:
Comments on Literature Reviews

Week 9 Participatory Approaches In Healthcare (Or Other Application Area Of Choice)

Healthcare is an important and distinctive arena of technology design for several reasons. Chief among these is the need to include the often disparate opinions of multiple stakeholders. Other factors to consider include the increasing use of new technologies in healthcare delivery and recordkeeping systems, and the need to ensure that these enhance, not hinder, patient care and overall health outcomes. This week we will examine the implications of new technology design and imposition in healthcare environments, and consider how human centred approaches can impact work processes. This requires us to focus attention on how best to initiate technological innovation and change, and indeed, ask if and when we even need to. (Or by popular choice, we can focus on another area of PD that more interests the class.)

Read:
Chapter 10: Health Information Systems Program – Participatory design within the HISP network. Jørn Braa and Sundeeep Sahay

Week 10 Project Coaching

This week will be devoted to project team coaching sessions with the instructor or TA, as the course project work heads into its final phase. Teams are invited to bring the issues that most concern them. These coaching sessions will be scheduled ahead of time, mainly, but not necessarily during regular class time. See the on-line sign up sheet.

Week 11 Course Wrap-Up

Innovation, Participation, and Artful Integration

We began this course with a discussion of the history and possible future of PD in an evolving social context. This week we conclude the course by exploring the prospects for participatory design that can be integrated within the context of the increasingly ubiquitous digitally mediated environments. We pay critical attention to concepts such as “innovation” and the hype around new forms of web/mobile/’internet of things’ technologies that hold the promise of facilitating wider participation in online cultural (peer) production. At the same time we need to be aware of these technologies and the wider contexts of their
design/use, and to discuss their implications for our work as participatory systems developers and knowledge media designers.

Read: TBA

Activity: Project Presentations

**Week 12**    **Project Presentations**

**Week 13**    **Project Presentations**

8 April 2016    Final Report due