JIE1001
Seminar in Identity, Privacy and Security

Preliminary Course Outline - Fall 2008

Public lecture: 1-1.5 hours   Seminar: 1.5-2 hours, weekly

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We are witnessing the rapid expansion of information and communications technologies (ICTs), most notably the internet, into many aspects of everyday life. At the same time there has been a growing preoccupation with ‘security’ post-9/11. These developments raise a host of complex social, technical, scientific, legal and ethical issues. What are the threats to personal safety, national security, vital infrastructures, civil liberties, democratic processes? What protections are appropriate? What values and techniques should guide our efforts to promote identity integrity, privacy and security?

Several key questions follow… How do we secure the infrastructures on which personal and national economy, safety and security and other critical operations depend? What role can ICTs play in achieving identity integrity, privacy protection and security? What new risks do they pose? Addressing these questions has spurred an unprecedented interest and activity in developing safety and security measures over the last few years. Secure electronic transactions, biometric passports, smart access cards, and electronic surveillance are some examples of growing security technology trends. Simultaneously, linked to this movement, the societal implications of security measures for ethical behaviour and human rights have radically expanded.

The successful development of meaningful and viable identity, privacy and security measures touches upon a number of diverse disciplines ranging from Communications and Computer Networks to Law and Information Studies. Also, the widespread implementation of identity and security technologies and systems will depend upon a new breed of professionals who are able to design, develop and implement effective but also fair and transparent products, practices, services and policies. This course aims to provide an interdisciplinary foundation for the education of such professionals.

See: [http://www.ipsi.utoronto.ca/](http://www.ipsi.utoronto.ca/)
Calendar Description:
This interdisciplinary course examines issues of identity, privacy and security from a range of technological, policy and scientific perspectives, highlighting the relationships, overlaps, tensions, tradeoffs and synergies between them. Based on a combination of public lectures, in-depth seminar discussions and group project work, it will study contemporary identity, privacy and security systems, practices and controversies, with such focal topics as biometric identification schemes, public key encryption infrastructure, privacy enhancing technologies, identity theft risks and protections, on-line fraud detection and prevention, and computer crime, varying between offerings. Seminars open to general attendance will be scheduled regularly during the first part of each lecture. The second part of the lecture will be restricted to students enrolled in the course.

Prerequisites:
Students should come with a basic appreciation for the recurring technical, scientific or policy issues in the fields of identity, privacy and security. While students should already have some basic background in one of these areas, it is not expected that they will come with substantial knowledge in them, only the interest to learn. Because this course is jointly offered by Electrical and Computer Engineering (ECE) and the Faculty of Information (FI), students should expect to be exposed to technical and policy approaches to identity, privacy and security topics they will not immediately be familiar with. However, given the deliberate inter-disciplinarity of the course, presentations and materials will be tailored to suit a broad range of backgrounds. While there is no formal pre-requisite for this course, MIS students are recommended to take FIS 1210 – Information in its Social Contexts, beforehand or in parallel. If you have concerns about whether you have the necessary preparation for the course, contact an instructor as soon as possible to discuss this.

Teaching approach:
The course will be conducted as a combination of public lectures, followed by seminar discussions among registered students, instructors, and guest speakers when present – with student review and commentary on the lectures, assigned readings and recent media news reports. There will be a strong emphasis on exploring security issues from a variety of perspectives with others who have varied disciplinary backgrounds. This will require attention to clear expression of experiences, concepts and opinions in conjunction with respectful listening and willingness to engage with alternative viewpoints. Active participation in these discussions, based on prior reading and/or experience is expected. There will be several occasions during the course when students will make presentations to classmates and wider audiences, for which they will receive feedback and be graded on. Students will also be expected to participate in an on-line discussion forum reflecting on the readings and class discussions.

On-line Facilities:
The course will make use of the Sakai learning management system for announcements, course discussions, sharing documents, and posting assignments and term papers. Students need to register themselves via [http://sakai.atrc.utoronto.ca/portal](http://sakai.atrc.utoronto.ca/portal) and then complete a personal profile, the template for which can be found in the Resources/Student profiles folder. We will also be making use of Bibwiki, an experimental, but already (fairly) robust, prototype collaborative bibliographic service currently being developed by Sunir Shah and a KMDI project team.
Required Readings:
There will be required readings each week, which will be available through the on-line course repository, in Resources/Readings.

Evaluation:
Grades will be assigned by the instructors for a combination of supervised (S) and un-supervised (U) work conducted individually (I) and collectively within project groups (G) for the following assignments:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
<th>Week #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature reviews (contributed to course bibliography, Bibwiki)</td>
<td>15% (I/U)</td>
<td>5</td>
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<tr>
<td>Oral presentation of required reading</td>
<td>10% (I/S)</td>
<td>2-10</td>
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<tr>
<td>Group project</td>
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<tr>
<td>▪ Personal profiles</td>
<td>0% (I/U)</td>
<td>2</td>
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<tr>
<td>▪ Initial group memo</td>
<td>10% (G/U)</td>
<td>3</td>
</tr>
<tr>
<td>▪ Integrative overview (interim report)</td>
<td>10% (G/U)</td>
<td>7</td>
</tr>
<tr>
<td>▪ Backgrounder article (one per project member)</td>
<td>15% (I/U)</td>
<td>9</td>
</tr>
<tr>
<td>▪ Project presentation</td>
<td>15% (G/S)</td>
<td>12-13</td>
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<tr>
<td>▪ Final project report</td>
<td>10% (G/U)</td>
<td>14</td>
</tr>
<tr>
<td>Class participation (in-class and electronically)</td>
<td>15% (I/S)</td>
<td>1-13</td>
</tr>
</tbody>
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Cumulatively, the proportion of individual/group and supervised/un-supervised breaks down as follows:

- Individual: 55%
- Group: 45%
- Supervised: 40%
- Un-supervised: 60%

PhD students registered in the course will also be expected to write a short supplementary research-oriented paper as negotiated with the instructor(s).

Teaching Assistant:

TBA
Schedule:

Week Topics +Speakers + Required Readings

1. **Introduction to Identity, Privacy and Security**
   Course welcome, overview, self-introductions, logistics
   Introductions by the co-instructors to the core course topics of identity, privacy and security, viewed from their technological, policy and scientific perspectives
   Course expectations

2. **Identity, Privacy and Security basics**
   Survey of contemporary issues in identity, privacy and security
   Course project team formation and discussions
   Read: TBA

3. **Policy Perspectives**
   Introduction to policy perspectives on identity, privacy and security
   Mapping human and non-human actors
   Speaker: Prof Andrew Clement, Faculty of Information, UofT
   Read: TBA

4. **Technology Perspectives**
   Introduction to biometric technologies for identity, privacy and security
   Speaker: Prof Kostas Plataniotis, Dept of Electrical and Computer Engineering, UofT
   Read: TBA

5, 6 & 7 **Invited guest speakers, selected from among those listed below.**
Topic possibilities:
   Biometric identity schemes – REAL ID, ePassports.
   Public key encryption infrastructures
   Risk management support
   Identity management – in-person and on-line
   Border security – no-fly/watch lists
   Identity theft and protection
   Network security – threats and protections
   Biometric encryption
   Privacy enhancing technologies
   Security theatre
   Surveillance – identity, privacy and security tradeoffs
   Identity integrity and other human/information rights
   Customer service – identity, privacy and security tradeoffs
   Policymaking and new security technologies
   Computer crime and forensics

   Read: Articles selected from the reading list in consultation with the guest speaker as appropriate to the focal topic(s)
8. **Interim project reviews (no public session)**
   In class session in which project teams present their interim project overviews and receive class and instructor feedback

9, 10 & 11. **Invited guest speakers, selected from among those listed below.**
   Topic possibilities: as listed for weeks 5, 6 & 7
   Read: Articles selected from the reading list in consultation with the guest speaker as appropriate to the focal topic(s)

12. **Class project presentations - I**

13. **Class project presentations – II**
   Course Wrap-up

14. **All term work due**

Note this outline is preliminary and subject to change, with appropriate notice given.
Confirmed guest speakers for Fall 2008 (topics tentative):

George Tomko, biometric expert, Toronto – Biometric encryption and cognitive security
Colin Bennett, Dept of Political Science, Univ. of Victoria – Politics of privacy standardization
Stephanie Perrin, Director General, Risk Management, Service Canada – Managing privacy risks
Jean Camp, Informatics Dept, Univ. of Indiana – ‘Technologies of trust' and value-sensitive design

(other invitees pending)

Guest speakers from Fall 2007:
Ann Cavoukian, Information and Privacy Commissioner of Ontario
Alex Stoianov, Biometric Scientist, IPC Ontario
Svetlana Yanushkevich, Dept of Electrical and Computer Engineering, Univ of Calgary
Peter Hope-Tindall, Privacy Lead, ServiceOntario
Dean Barry, Senior Policy Advisor, International Affairs Directorate, Public Safety Canada
Robert Beggs, CISSP, CISA, President, Digital Defence
Susheel Gupta, Special Advisor to the President of the Canadian Air Transport Security Agency
Resources:

Readings: (Required and supplementary readings will be selected from among these and others that guest speakers recommend, based on particular topics covered in the public lectures.)


Some web resources on Biometrics and Information Security:

European Biometric Forum - http://www.eubiometricforum.com/

Face Recognition Web Page: http://www.face-rec.org/


Yahoo Biometrics Discussion Group: http://tech.groups.yahoo.com/group/biometrics/

   (Under the button "additional Resources" you will find a number of reports including testimony to the US Senate. Sorry most of the resources are from the States).

Bioprivacy.org
   The BioPrivacy Application Impact Framework
   www.bioprivacy.org/bioprivacy_main.htm
   BioPrivacy Technology Risk Ratings
   www.bioprivacy.org/technology_assessment_main.htm
   Best Practices for Privacy-Sympathetic Biometric Deployment
   www.bioprivacy.org/best_practices_main.htm