Spring 2017 Syllabus
UIC CS 477,
Public Policy, Legal, & Ethical Issues in Computing, Privacy, and Security;
Chicago-Kent Special Topics, Computer and Network Privacy and Security

Tuesdays and Thursdays, 2:00–3:15

Team taught:
Prof. Robert Sloan, UIC Computer Science Department, sloan@uic.edu
Office hours: 10–11 am Tuesdays, 1112 SEO (or drop by—I’m in a lot)
Prof. Richard Warner, Chicago-Kent/IIT School of Law, rwarner@kentlaw.iit.edu

This unusual course will meet with a mixed class of UIC students from computer science, communications, and other disciplines concerned with privacy and security in the modern era, and Kent Law school students. Meeting times:
   Tuesdays: IIT Chicago-Kent, 565 West Adams, room 520.

Course Description, Goals, and Objectives

In this course you will learn what is “inside the box” of modern electronic security and privacy. We will do our best to make the course self contained, so law students will learn about how tracking cookies, cryptography, and malware work, and computer science students will learn how to read appellate court decisions, and everybody will learn a bit of economics.

Required book:

Recommended book:

Numerous other provided readings.

Course requirements, evaluation, and grading

The heavy majority of the course grade will be based on an original term paper on a policy topic of the student’s choice.
Other small factors will include:
- Occasional short written or technological assignments, graded on a completed/not completed basis
- Participation in in-class discussion
Course Topics

Security

1. The data breaches and voting machines: Week of January 17

Sloan/Warner, Chapter 1, Chapter 8, pp. 181–187 only.

Bruce Schneier, The Security Mindset, March 2008,
https://www.schneier.com/blog/archives/2008/03/the_security_mi_1.html

Ron Rivest and Philip Stark, Still time for an election audit: Column, USA TODAY,

Andy Greenberg, Hacked or Not, Audit This Election (And All Future Ones), WIRED,


Recommended reading

Handing over the Keys to the Castle,

Jones and Simons, BROKEN BALLOTS: WILL YOUR VOTE COUNT?, 2012,
https://www.amazon.com/Broken-Ballots-Count-CSLI-Lecture-Notes-ebook/dp/B00KYL0MRG/ref=asap_bc?ie=UTF8

2. Why Not Just Negligence Liability? For Tuesday, January 24

Kline v. 1500 Massachusetts Ave. Apartment Corporation

Bruce Schneier, Liability changes everything, November 2003,

Warner and Sloan, Defending Our Data: The Need for Information We Do Not Have,

Recommended reading


3. **Software Failures and More on Vulnerabilities** For Thursday, January 26

Sloan/Warner, Chapters 6–7.


4. **Human Vulnerabilities**


**Recommended reading**

Brian Krebs, *SPAM NATION: THE INSIDE STORY OF ORGANIZED CYBERCRIME-FROM GLOBAL EPIDEMIC TO YOUR FRONT DOOR*

5. **Network Vulnerabilities**

Sloan/Warner, Chapters 8


Committee On Commerce, Science, And Transportation, A “Kill Chain” Analysis of the 2013 Target Data Breach,
Recommended reading

Douglas W. Hubbard and Richard Seiersen, HOW TO MEASURE ANYTHING IN CYBERSECURITY RISK, https://www.amazon.com/dp/B01J4XYM16/ref=pe_385040_118058080_TE_M1DP


6. Malware

Sloan/Warner, Chapter 9.

Recommended reading


Jeffrey Hunker, CREEPING FAILURE: HOW WE BROKE THE INTERNET AND WHAT WE CAN DO TO FIX IT (McClelland & Stewart, 2010)

Kim Zetter, COUNTDOWN TO ZERO DAY: STUXNET AND THE LAUNCH OF THE WORLD’S FIRST DIGITAL WEAPON

7. Lemons Market Issues


Recommended reading


8. The FTC and the FCC
FTC v. Wyndham, available on Piazza

FTC v. LabMD, available on Piazza

Recommended reading

Chris Hoofnagle, FEDERAL TRADE COMMISSION PRIVACY LAW AND POLICY

9. Outsourcing Solutions

Bruce Schneier, The Case for Outsourcing Security,

Why (and when) outsourcing security makes sense,

Can't Touch This--New Encryption Scheme Targets Transaction Tampering: An Estonia-based cybersecurity firm adopts a “blockchain” public ledger system to verify online transfers of sensitive information,
https://www.scientificamerican.com/article/can-t-touch-this-new-encryption-scheme-targets-transaction-tampering/

Recommended reading


10. The Computer Fraud and Abuse Act

United States v. Morris

Facebook v. Power Ventures

Recommended reading

Orin Kerr, Cybercrime's Scope: Interpreting 'Access' and 'Authorization' in Computer Misuse Statutes,

11. *Network Neutrality* [fits with the CFAA as another attempt to control access for business purposes]


**Recommended reading**

Angela Daly, *PRIVATE POWER, ONLINE INFORMATION FLOWS AND EU LAW: MIND THE GAP*

12. *Espionage, Sabotage, and Cyberwar*


**Recommended reading**

DANA PRIEST AND WILLIAM M. ARKIN, *TOP SECRET AMERICA: THE RISE OF THE NEW AMERICAN SECURITY STATE*

JAMES BAMFORD, *THE SHADOW FACTORY: THE NSA FROM 9/11 TO THE EAVESDROPPING ON AMERICA*

Ronald J. Deibert, *BLACK CODE: SURVEILLANCE, PRIVACY, AND THE DARK SIDE OF THE INTERNET*

Thomas Rid, *CYBERWAR WILL NOT TAKE PLACE*

**Privacy**

13. *Privacy from the late 1800s to roughly 1984*


Isaac Asimov, “The Dead Past,” probably available online at [http://readnovelonline.com/ScienceFiction/Asimov41/27323.html](http://readnovelonline.com/ScienceFiction/Asimov41/27323.html)

“Computers may soon know you better than your spouse,” news item from Jan. 12, 2015, [http://www.computerworld.com/article/2868013/computers-may-soon-know-you-better-than-your-spouse.html](http://www.computerworld.com/article/2868013/computers-may-soon-know-you-better-than-your-spouse.html)
Recommended reading

Vance Packard, THE NAKED SOCIETY

Alan Westin, PRIVACY AND FREEDOM

14. Private sector privacy in the era of the web

Sloan/Warner, Chapters 3–5

a. An look at the early modern era

Dwyer v. American Express


Recommended reading

James Rule, PRIVACY IN PERIL


b. How the internet, the web, and web tracking work

Sloan/Warner, Chapter 2 (skipping Primer on computers), Chapter 10

c. Policy and economics


Recommended reading

Kenneth Bamberger and Deirdre Mulligan, PRIVACY ON THE GROUND DRIVING CORPORATE BEHAVIOR IN THE UNITED STATES AND EUROPE (strongly recommended), https://www.amazon.com/Privacy-Ground-Corporate-Behavior-Information/dp/0262029987/ref=asap_bc?ie=UTF8

15. "Big Data”: predictive analytics, network analysis


Recommended Reading

Steven Finlay, Predictive Analytics, Data Mining and Big Data: Myths, Misconceptions and Methods (strongly recommended)

Nate Silver, The Signal And The Noise: Why So Many Predictions Fail — But Some Don’t

Foster Provost, Tom Fawcett, Data Science For Business: What You Need To Know About Data-Mining And Data Analytic Thinking

Solon Barocas and Helen Nissenbaum, Big Data's End Run Around Procedural Privacy Protections, November 2014 Communications of the ACM.

16. The dominant regulatory response: Notice and Choice


Sloan/Warner, Chapter 11

Recommended reading


17. Governmental Surveillance: Fourth Amendment

Katz v. United States

Smith v. Maryland

§ 2703 of the Stored Communications Act
(Wiretaps, pen registers, trap and trace devices: telephone surveillance c. 1970 - 2013, and related rules on email metadata surveillance from ECPA)
Riley v. California

18. Governmental Surveillance: A First look at Terrorism and Intelligence
   a. Why should we care: Privacy (from the government) and the self

Sloan/Warner, The Self, the Stasi, and the NSA
   b. An initial look at the NSA’s authority

Reading:

Brennan Center for Justice, Are They Allowed To Do That?,

Patriot Act, Section 215 (50 U. S. Code § 1861)
http://www.law.cornell.edu/uscode/text/50/1861

Foreign Intelligence Surveillance Act, Section 702 (50 U. S. Code § 1881a)
http://www.law.cornell.edu/uscode/text/50/1881a (skim)

Executive Order 12333

   c. A synthesis and analysis of all the surveillance statutes

19. Technology Time: Cryptography
   a. Background and history to the early 1970s
   b. Modern Crypto: Diffie-Hellman to AES
   c. What precisely is encrypted, or TLS vs. PGP
   d. Usability, or why we don’t encrypt our email
   e. Alleged NSA attempts to weaken crypto standards


20. Compelled decryption, the Fifth Amendment, and Snowden’s Email Provider

US v Lavabit

Recommended reading:
21. Governmental Surveillance: Terrorism and Intelligence: Snowden revelations and responses

“INCENSER, or how NSA and GCHQ are tapping internet cables,”
http://electrospaces.blogspot.com/2014/11/incenser-or-how-nsa-and-gchq-are.html

Klapper v. Amnesty International

Klayman v. Obama

Recommended Reading
“Document Trove Exposes Surveillance Methods,” WSJ,
http://www.wsj.com/articles/SB10001424052970203611404577044192607407780


GLENN GREENWALD, NO PLACE TO HIDE: EDWARD SNOWDEN, THE NSA, AND THE U.S. SURVEILLANCE STATE

JULIA ANGWIN, DRAGNET NATION: A QUEST FOR PRIVACY, SECURITY, AND FREEDOM IN A WORLD OF RELENTLESS SURVEILLANCE

Privacy Oversight Board Report on Patriot Act Section 215

Privacy Oversight Board Report on Patriot Act Section 702

22. Governmental Surveillance: Effectiveness

Bruce Schneier, We’re Giving Up Privacy and Getting Little in Return,
https://www.schneier.com/essays/archives/2006/05/were_giving_up_priva.html

Privacy Oversight Board Report on Patriot Act Section 215 (selections)

Privacy Oversight Board Report on Patriot Act Section 702 (selections)

23. Proposed solutions

a. Legislation
Abril and Lipton, *The Right To Be Forgotten: Who Decides What The World Forgets?*, Section III.

b. "Context"


c. Coordination norms

Sloan/Warner, Chapter 12

Warner/Sloan, *Relational Privacy*