

# **Georgia Institute of Technology**

## **Information Security Policies**

**Spring 2015**

### **OVERVIEW OF THE COURSE**

#### **Course Purpose**

Both public- and private-sector organizations are increasingly treating cyber-security issues as top-level risks. Major data breaches at companies such as Target and information security leaks such as those by Edward Snowden have enormous impacts on organizations. This course examines strategies for managing information security risks, developing knowledge suitable for a range of organizational roles such as board of directors, top management, chief information security officers, and persons reporting to such actors. The course examines the challenge of constructing and complying with Federal, State, local and organizational information security policies and legislation. It also examines key public policy cyber-security issues, recognizing the need for public-private partnerships, legislation, international coordination, and other systemic approaches for managing these risks. More generally, the course seeks to develop the multi-disciplinary thinking that will take account of the technology, business strategy, policy, and law of information security.

#### **Course Description**

This mixed undergraduate- and graduate-level course takes a multi-disciplinary approach to the study of information security – a current topic of intensive research, system implementation, standards development, and public policy debate. The course is primarily lecture-based, with Socratic discussion of assigned readings, as well as active student participation via lively discussions and debates. Class sessions often include small-group, in-class activities to ensure hands-on experience in apply the concepts presented during lectures. There are no pre-requisites for this course, and students from varied backgrounds are welcome in the course. This course features a collaboration with an Atlanta-based company where students will analyze real-world security events along with their coursework to develop security policies that will bring students closer to being practicing security professionals. The course also features semester-long attention to security issues in the

development of augmented reality systems, as an example of cutting-edge information security issues. The professors draw on their extensive experience in information technology, as well as the business, government, and legal aspects of current cyber-security debates.

## Objectives

This course will enable students to understand how and why information security strategies and policy are developed and managed. Specific objectives include:

- Understanding the legal and policy issues surrounding technologies that protect intellectual property, sensitive information, and other organizational information assets;
- Understanding the role of technical standards to supplement legal and regulatory requirements;
- Analyzing data breaches and related events to design and implement organizational strategies to address such risks;
- Understanding the tensions between information security and usability;
- Understanding the tensions between information security and privacy;
- Developing the multidisciplinary skills needed to analyze, manage, and resolve the challenges associated with information security law and policy;
- Gaining a basic grounding for future technical and other research in security policy via the examination of current research issues and problems; and
- Gaining experience handling real-world security policy challenges through analysis of software and business artifacts using written and oral communication.

## BASIC INFORMATION

INSTRUCTORS: [Prof. Peter Swire](#)

**Office:** Scheller Room 4163

**Phone:** 240-994-4142

**Email:** [Peter.Swire@scheller.gatech.edu](mailto:Peter.Swire@scheller.gatech.edu)

**Office Hours:** <Insert Office Hours> and by appointment.

Prof. Blair MacIntyre

**Office:** TSRB Room 232

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**Office Hours:** <Insert Office Hours> and by appointment.

**Class time:** <insert>

<b>Location:</b>	<insert>
<b>Course website:</b>	All course materials are available via T-Square.
<b>Class text:</b>	All required materials for this course will be available online through T-Square. Currently, no textbook exists for this course, but there will be an extensive amount of required reading in the form of academic papers and other readings related to information security strategies and policy.
<b>Prerequisites:</b>	There are no prerequisites, and the multi-disciplinary nature of the course means that students from many backgrounds can benefit from and succeed in the course. Open to both undergraduate and graduate students, with somewhat greater assignments for graduate students.

## **COURSE REQUIREMENTS AND GRADING**

### **PROJECTS**

There will be three projects in the course, with the precise content developed close to the beginning of the semester in order to take advantage of current developments:

1. Data breach and company strategy. Based on the presentation of an actual data breach by an Atlanta-based company, students will work in small teams (2-3 students) to develop a company policy/strategy to address information security risks in the wake of a major data breach. Teams will be either undergraduate or graduate students, with the length of the project for undergraduates being 2/3 of the graduate length.
2. Information security law and policy paper. Students will be assigned to write a paper on a current information security law or policy issue. For this paper, the student will first argue the case for one stakeholder in the debate, and then argue for an opposing view, before concluding with a brief discussion of the student's own view. The paper length for undergraduates will be 2/3 of the graduate length.
3. Augmented reality security project. Drawing on the augmented reality expertise of Professor MacIntyre, teams of students will conduct a security assessment of a technical artifact that could be incorporated into an augmented reality system in a home or business. Teams will be either undergraduate or graduate students, with the length of the project for undergraduates being 2/3 of the graduate length.

### **PROJECT PRESENTATIONS**

During the exam period, each student will give an oral presentation in which they will describe one of their projects and what they learned in the course. Length of presentations will depend upon course enrollment.

## **COURSE CALENDAR AND CONTENT**

Week 1: Introduction to information security  
Week 2: Information security laws: HIPAA, GLBA, FISMA  
Week 3: Information security standards: ISO, PCI-DSS  
Week 4: NIST cybersecurity framework and proposed U.S. legislation  
Week 5: Cyber-war and international cybersecurity  
Week 6: Security issues for Augmented Reality & the Internet of Things  
Week 7: Open source vs. proprietary software & security  
Week 8: Security vs. usability  
Week 9: Formal approaches to security & the Common Criteria  
Week 10: Security vs. privacy  
Week 11: Data Breach I: briefing on data breach incident  
Week 12: Data Breach II: developing organizational policies & group projects  
Week 13: Augmented reality as applied to the home; project work  
Week 14: The future of cybersecurity: long-term perspectives  
Week 15: Review

## **CLASS PARTICIPATION**

Attendance is required. Students will participate in class discussion. This will be done via an “on call” group assignment established by week 3 of the semester. Students will be assigned to one of approximately four different “on call” groups.

Students must be thoroughly prepared to actively discuss in class on the “on call” days to which they are assigned. Preparation may include formulating and bring discussion questions and reading supporting material to address weaknesses or concerns raised by the assigned readings. If for any reason a student is unable to be prepared for class on any given day, they must let the instructor know **before** class begins. Students are able to take a “pass” during one class session for which they were on call over the course of the semester.

## **EVALUATION PROCEDURES**

Final grades in the course will be determined as follows:

Class Participation	15%
Data breach project	25%
Law and policy project	25%
Augmented reality project	25%
Project presentation	10%

The grading scale for the final grade will be as follows:

A: at least 90

B: 80-89

C: 70-79

D: 60-69

F: below 60

### **COURSE TEXT:**

All required material for this course will be available online through the course Website. There will be an extensive amount of required reading in the form of academic papers related to security policy, law, technology, and privacy as described in the Course Description. We can recommend optional texts that supplement the course for the interested student.

### **ACADEMIC INTEGRITY:**

The course process will follow all relevant and appropriate Georgia Institute of Technology academic regulations (<http://www.honor.gatech.edu>) including those about academic integrity. All students are expected to maintain traditional standards of academic integrity by giving proper credit for all work. All suspected cases of academic dishonesty will be aggressively pursued. A student shall be guilty of a violation of academic integrity if he or she represents the work of others as his or her own or aid another's misrepresentation. **Any violation associated with a homework, assignment, examination or quiz will result in a zero for the assignment and a failing grade for the course.** Such violations will be reported to the Office of Student Integrity, which may impose penalties beyond those by the instructor. Students are encouraged to read the ACM Code of Ethics (<http://www.acm.org/constitution/code.html>), particularly sections 1.3, 1.5, 1.6, 2.2 and 2.4.

### **STUDENTS WITH DISABILITIES:**

The course process will follow all relevant and appropriate Georgia Institute of Technology academic regulations including those relevant to students with disabilities. Any students requiring additional assistance due to disabilities (e.g., learning disabilities) should contact the professor during the first week of the semester. Students requiring extra time for examinations and quizzes are asked to make arrangements at least three days in advance. You may contact the ADAPTS (<http://www.adapts.gatech.edu>) regarding campus services.

### **CLASS PARTICIPATION:**

Attendance is required. This class is discussion-oriented, and students must participate in class discussions.

**LATE POLICY**

This course has a simple policy for late assignments. For each day a project is late, students will lose 10% of the total value of the project, which is a full letter grade. We have scheduled the due dates for this class to ensure that students have plenty of time to complete their projects on time. However, if, for any reason, you feel that you can't complete a project on time, please contact the instructors. We can be flexible, but only if you let us know about your concerns in advance. Once the project is due, the late policy will take effect.