

What do I do?

Ph.d. at Danmarks Tekniske Universitet (DTU)

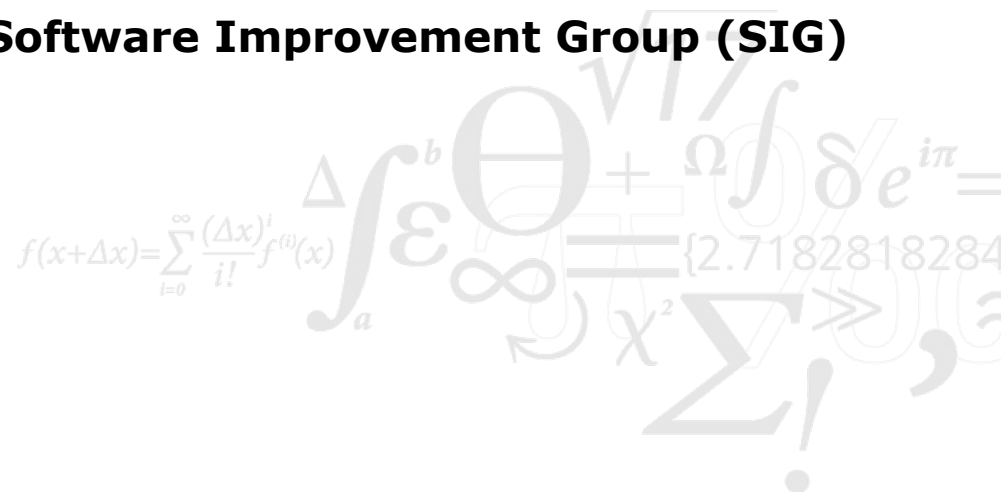
- Formal methods for security
- Privacy (e.g., for voting protocols)
- Composition of security protocols

Technical Interests

- Application security
- Cryptography
- Capture The Flag (CTF)

Software Security Consultant at Software Improvement Group (SIG)

- Secure Code Inspection
- Tool creation
- Threat Modelling
- Privacy Code Inspection



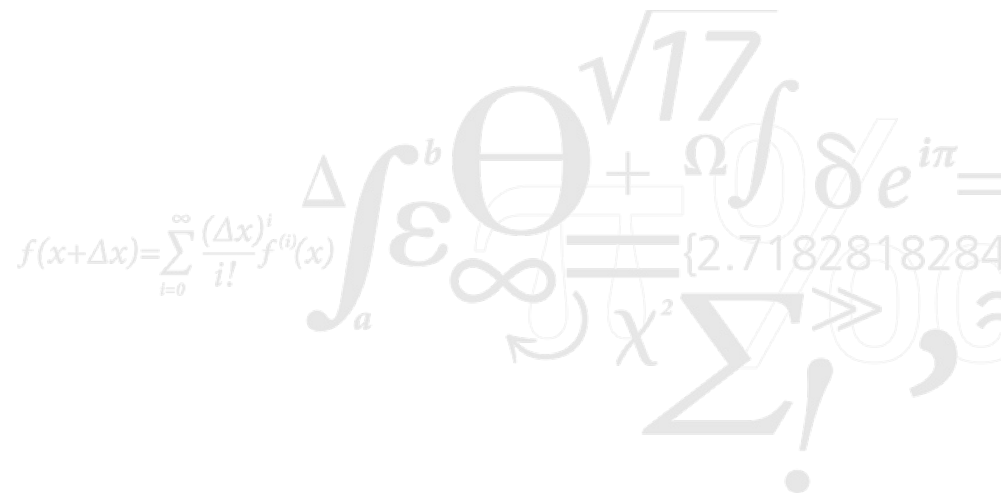
Course Objectives

*The objective of this course is to provide a **holistic introduction** to the **basic concepts** of computer security, which will provide the necessary basis for **ongoing scholarly studies** and **starting professional activities** in the area of computer security*

- No chain is stronger than its weakest link so all aspects that impact on security must be examined
- Our intention is to cover topics broadly, but not in great detail
 - Coverage should be sufficient to allow ongoing scholarly studies in computer security (possible courses listed on the next slide)
 - Coverage should be sufficient to allow a motivated engineer to learn more about computer security form self-study and on the job learning
- A few important topics are not covered at all
 - Some will be covered in later courses for those who continue

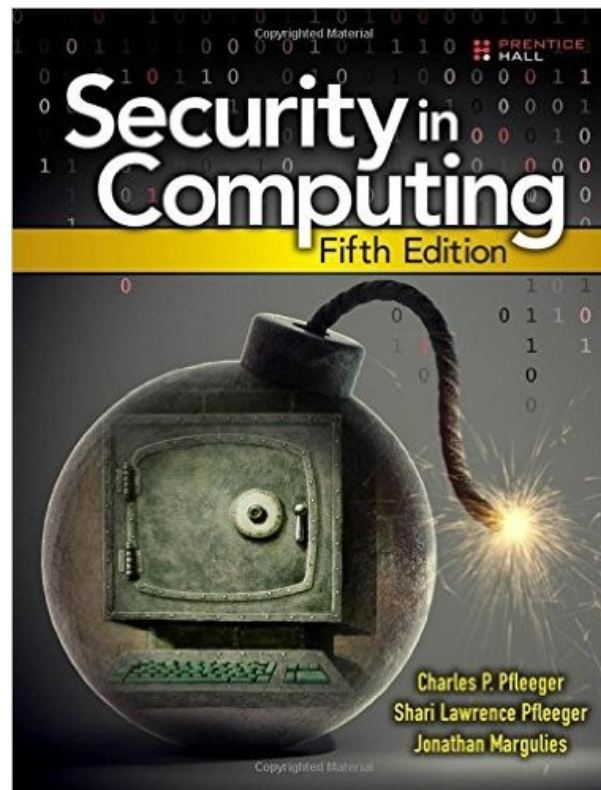
Course Overview

- Lectures (303A-042)
- Labs (in databars, list of rooms on DTU Learn)
 - Labs must be documented by a short report
 - *2 mandatory assignments*
- Examination
 - Evaluation of reports from 2 mandatory assignments
 - Final exam (multiple choice)



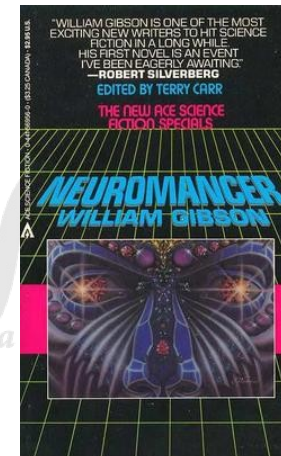
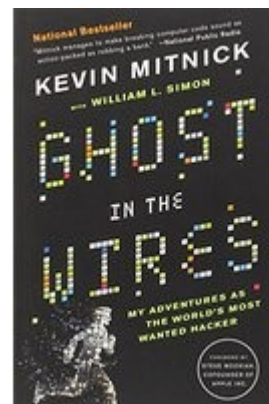
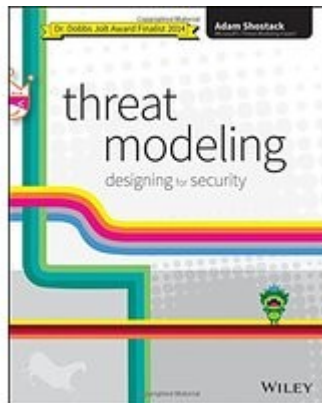
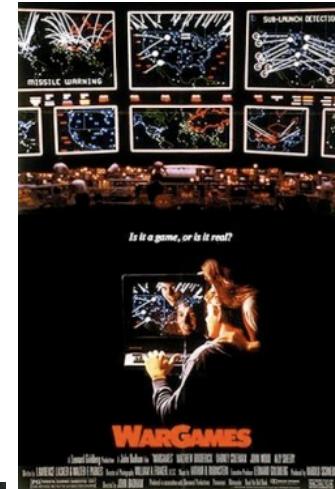
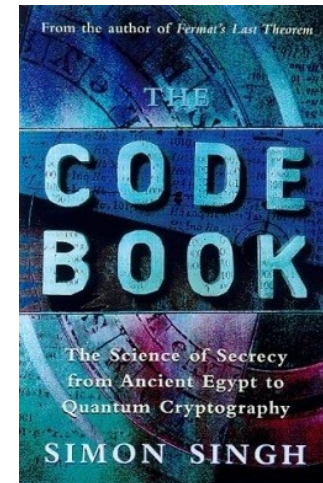
Textbook

- Pfleeger & Pfleeger: Security in Computing (5th Edition)



Extra Curricular Security Material

MR. ROBOT



Course Schedule

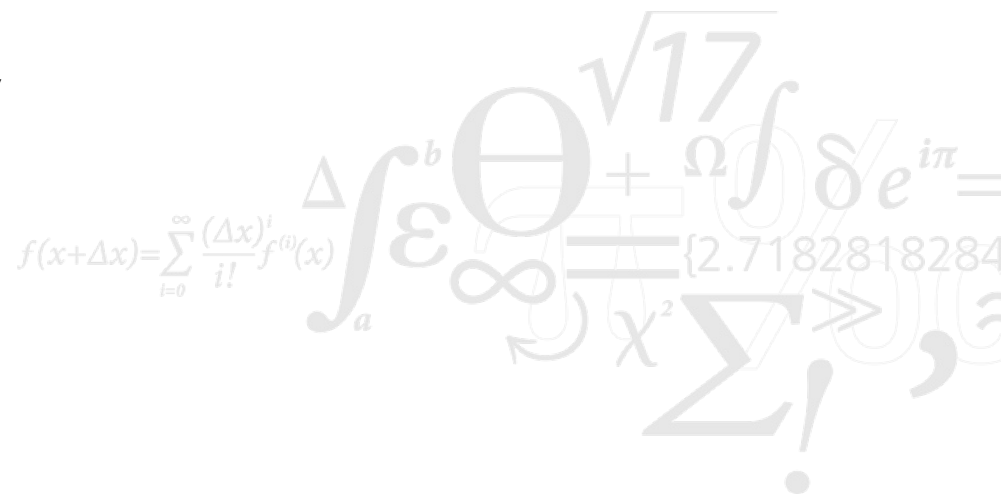
Date	Topic
04 Sep	Introduction
11 Sep	Cryptography I
18 Sep	Cryptography II
25 Sep	Protocol Security I
02 Oct	Protocol Security II
09 Oct	Privacy and Privacy Enhancing Technologies
16 Oct	Autumn Holiday
23 Oct	Authentication and Identity Management
30 Oct	Protection/Access Control
06 Nov	Security in Networks
13 Nov	Security Management and Legal Issues
20 Nov	Threat Modelling
27 Nov	Software Security I
04 Dec	Software Security II

Security courses at DTU Compute

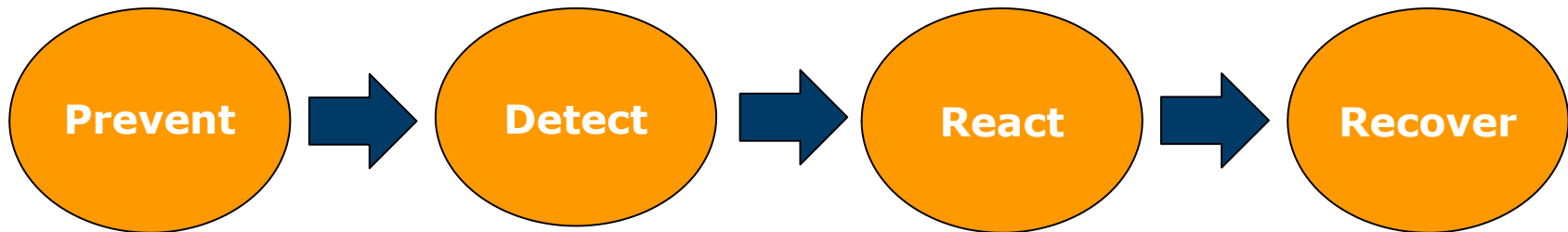
- Two research groups that focus on security at DTU Compute
 - Software Systems Engineering
 - *Focuses on modelling and analysis of information systems using language-based techniques and tools*
 - Cybersecurity Engineering
 - *Focuses on models, policies and (cryptographic) mechanisms to develop and support secure computing systems*
- Security courses at DTU Compute
 - 02239 Data Security (fall)
 - 02232 Applied Cryptography (fall)
 - 02234 Current Topics in Systems Security(fall)
 - 02238 Biometric Systems (June)
 - 02242 Program Analysis (fall)
 - 02255 Modern Cryptology (Spring)
 - 02233 Network Security (spring)
 - 02244 Logic for Security (spring)
 - 02191 Computer Security Forensics (January)
 - 02192 Computer Security Incident Response (spring)
 - 02193 Ethical Hacking (June)

Computer Security Study Line

- Mandatory courses (10 ECTS must be selected from this list)
 - 42429 Project Management or 42430 Project Management
 - 42436 Technology Entrepreneurship
 - 42504 Innovation in Engineering or 42500 Innovation in Engineering
 - 42634 X-Tech Entrepreneurship
- Selective courses (30 ECTS must be selected from this list)
 - 02220 Distributed Systems
 - 02232 Applied Cryptography
 - 02233 Network Security
 - 02234 Current Topics in System Security
 - 02238 Biometric Systems
 - 02239 Data Security
 - 02242 Program Analysis
 - 02244 Logic for Security
 - 02255 Modern Cryptology
 - 02291 System Integration



Specialist Program in Cybersecurity



Data Security
Applied Cryptology
Current Topics ...
Biometric Systems
Program analysis
Logic for Security
System Integration

Network Security

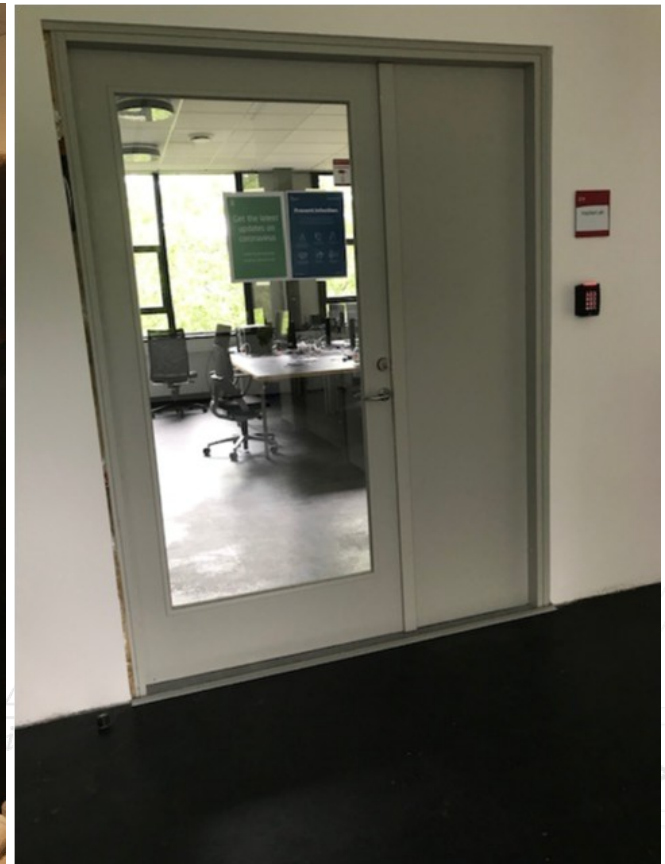
Ethical Hacking

Incident Response

Security Forensics

Join DTUHax (<https://hackerlab.dtu.dk/>)

- Meets most Wednesdays 17-19 in the Hackerlab (322/233)



Gamification

Learning security can be a lot of fun!

Capture The Flag (CTF)

- HackTheBox: <https://www.hackthebox.com/>
- CryptoHack: <https://cryptohack.org/>
- CTFTime: <https://ctftime.org/>

Broken applications

- WebGoat: <https://github.com/WebGoat/WebGoat>
- NodeGoat: <https://github.com/OWASP/NodeGoat>
- OWASP Juice-Shop: <https://github.com/juice-shop/juice-shop>

Bug bounty programs

- HackerOne: <https://www.hackerone.com/>
- YesWeHack: <https://www.yeswehack.com/>