IT Security

Information & Network Security

by Philipp Bandow

original slides by Bjoern Kimminich

Philipp Bandow

- Master Student IT-Security at FH Wedel
- B. Sc. Computer Engineering from UAS Hamburg
- Lecturer at Nordakademie since 2021
- Working student in DevSecOps

Contact Information

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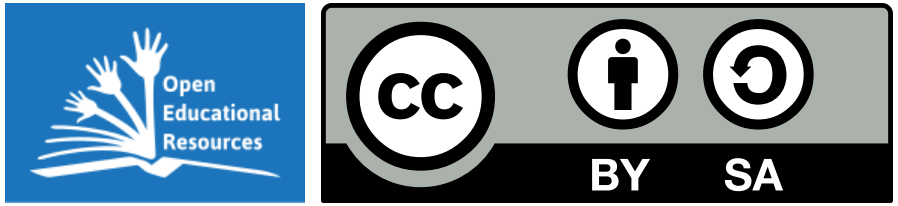
Miscellaneous

- Threema: AS7PA49H
- Keybase: philban
- Github: https://github.com/philband

Course Material

https://github.com/philband/it-security-lecture



Course Material

- All slides and references are in 🇬🇧 language
- The lecture can be held in 🇬🇧 or 🇩🇪 language
- Latest course material is available only on GitHub
- Content exists as `Markdown` files for use with Marp
- Slides can be downloaded as PDF from GitHub
- All slides are published as OER under CC BY-SA 4.0 license

You can help save a 🌳 by not 🖨 all slides for the entire course in advance as content might change during the course!

🎩 Rules

- Presence at lectures is mandatory and will be logged
- Exercises are mandatory (unless explicitly marked as *optional*)
- Exercises marked with
  - "🤝" are done in small work groups
  - "📌" are usually done as a group using whiteboard, flipcharts or brown-paper *or* a dedicated Spitfire virtual whiteboard
  - "📝" have a (digitally) written outcome per student or work group
  - "🏠" are homework and must be completed until the next lecture
- Active participation and questions are encouraged at all times
- If you are done early with the last exercise of the day, you may leave

Curriculum 1st Semester

1. Motivation
2. Security Goals
3. Malware
4. Network Security
5. Encryption
6. Security Management & Organization
7. Presentations of all Encryption work groups
8. Threat Modeling
9. Penetration Testing

Curriculum 2nd Semester

1. Open Web Application Security Project (OWASP)
2. XSS
3. Injection
4. Authentication Flaws
5. Authorization Flaws
6. Sensitive Data
7. Insecure Dependencies & Configuration
8. XXE & Deserialization
9. Secure Development Lifecycle

Schedule

- **Tuesdays, 13:15 - 15:45**
- 10 lectures (17.10. - 19.12.23)
- On-Site depending on my availability
    - Otherwise online via Teams

Test Exam

- At the end of 2nd semester (90min)
- ⚠️ Covers topics from both semesters

Recommended Resources

- Berkley Information Security and Policy - Best Practices & How-To Articles

Optional Literature Recommendations

- Andress: The Basics of Information Security (2nd Edition), 2014
- Shostack: Threat Modeling: Designing for Security, 2014
- Paar/Pelzl: Understanding Cryptography: A Textbook for Students and Practitioners, 2010
    - Introduction to Cryptography by Christof Paar (24 recorded lectures)

Prerequisites @ Angewandte Informatik (B.Sc.)

Information & Network Security	S5	Application Security & SDLC	S6
Diskrete Mathematik 2	S2	Datenbanksysteme	S2+3
Technische Grundlagen der Informatik 2	S3+4	Praxis der Softwareentwicklung	S3+4
Gestaltung von Informationssystemen	S3+4	Softwarequalitaet	S4
IT-Organisation und Projektmanagement	S3+4	Software Engineering	S5+6
Informatik und Gesellschaft	S1	Internet Anwendungsarchitekturen	S5+6