IT Security

Information & Network Security

by Bjoern Kimminich

Bjoern Kimminich

- Nordakademie Graduate (I99a)
- Product Group Lead Architecture Governance + Application Security at Kuehne + Nagel
- Lecturer at Nordakademie since 2009
- Volunteer in the Open Web Application Security Project
- Board Member of the German OWASP Chapter
- Project Lead of the OWASP Juice Shop

Contact Information

Email

- bjoern.kimminich@nordakademie.de
  - PGP: 062A 85A8 CBFB DCDA

Miscellaneous

- https://keybase.io/bkimminich
- https://twitter.com/bkimminich

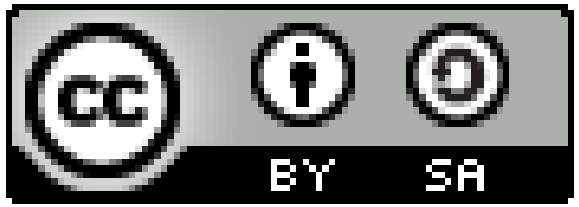
Exercise 0.1 (📌)

1. Write the industry you work in on a post-it and place it on the board. Cluster identical industries.
2. In the following table self-assess your own **IT security awareness** by ticking one of the columns

🥇 Gold	🥈 Silver	🥉 Bronze	🌳 Wood

Course Material

https://github.com/bkimminich/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. Threat Modeling
8. 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, 9:15 - 11:45**
- 10 lectures (13.10. - 15.12.20)
- ❌ Tue, 13.10. has been moved to ✓ Wed, 21.10. (13:15 - 15:45)

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