# **IT Security**

**Information & Network Security** 

by Bjoern Kimminich

# **Bjoern Kimminich**

- Nordakademie Graduate (199a)
- 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
- OWASP Project Committee Chair



# **Contact Information**

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#### 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	<b>3</b> 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 p 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
  - o "" have a (digitally) written outcome per student or work group
  - "â" 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

- Fridays, 14:30 17:15
- 9 lectures (22.10. 17.12.21)
- 100% online lecture

#### **Test Exam**

- At the end of 2nd semester (90min)
- **1** 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		Application Security & SDLC	<b>S</b> 6
Diskrete Mathematik 2		Datenbanksysteme	S2+3
Technische Grundlagen der Informatik 2		Praxis der Softwareentwicklung	S3+4
Gestaltung von Informationssystemen		Softwarequalitaet	S4
IT-Organisation und Projektmanagement	S3+4	Software Engineering	S5+6
Informatik und Gesellschaft	S1	Internet Anwendungsarchitekturen	S5+6