

# **IT Security**

## **Information & Network Security**

**by Bjoern Kimminich**

# Bjoern Kimminich

- [Nordakademie](#) Graduate (199a)
- IT Architect / AppSec Officer 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

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## Miscellaneous

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

# 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

- Physical presence at lectures is mandatory and will be logged
- Exercises are mandatory (unless explicitly marked as *optional*)
- Exercises marked with "📌" might be done in the plenum
- Exercises marked with "📝" must have a (digitally) written result
- Active participation is encouraged. Otherwise at least be quiet
- If you are done 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

- **Thursdays, 9:15 - 11:45**
- 9 lectures (17.10. - 19.12.19)
- Lecture from ~~✗~~ 24.10. has been moved to **✓** 05.11.
- Lecture on ~~✗~~ 31.10. is dropped due to 🎃 public holiday

## 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
<a href="#"><u>Diskrete Mathematik 2</u></a>	S2	<a href="#"><u>Datenbanksysteme</u></a>	S2+3
<a href="#"><u>Technische Grundlagen der Informatik 2</u></a>	S3+4	<a href="#"><u>Praxis der Softwareentwicklung</u></a>	S3+4
<a href="#"><u>Gestaltung von Informationssystemen</u></a>	S3+4	<a href="#"><u>Softwarequalitaet</u></a>	S4
<a href="#"><u>IT-Organisation und Projektmanagement</u></a>	S3+4	<a href="#"><u>Software Engineering</u></a>	S5+6
<a href="#"><u>Informatik und Gesellschaft</u></a>	S1	<a href="#"><u>Internet Anwendungsarchitekturen</u></a>	S5+6