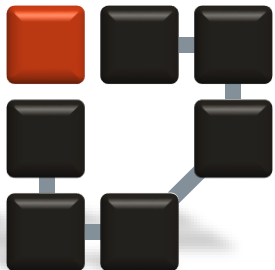


Smart Grid

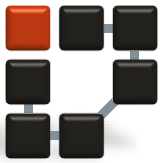
Dr.-Ing. Abdalkarim Awad
14.10.2015



Department of Computer Science 7
Computer Networks and Communication Systems



FRIEDRICH-ALEXANDER
UNIVERSITÄT
ERLANGEN-NÜRNBERG
TECHNISCHE FAKULTÄT



Course Organization

■ General Information

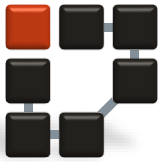
- Lecture: Wednesday 10:15 - 11:45, 04.137
- 2 SWS, 2.5 ECTS-Credits
- Exercises: Thursday 10:15 - 11:45, 04.158
- 2 SWS, 2.5 ECTS -Credits
- Exercises : Wednesday 14:15 - 15:45, 04.158
- 2 SWS, 2.5 ECTS -Credits

■ Questions and Answers / Office hours

- Dr.-Ing Abdalkarim Awad
- At my office: Martensstr. 3, Room 06.157, Tel 85-27914
- Office hours:
 - Monday 10-11; Tuesday 14-15

■ Handouts (self-Contained Course)

- All slides will be available online (and they are enough)
- The slides may be updated during the course



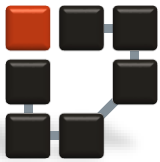
Requirements:

- Self-Contained Course
 - No Official Pre-requisites
- Background in the following fields is helpful
 - Power Systems
 - Data communication Networks
 - Optimization



Course Content

- Overview
- Basics of Power Systems
- Applications
- Communications Technologies
- Renewable Energy
- Demand Side Management
- Standards & Interoperability
- E-Mobility
- Monitoring and Control
- Privacy and Security



Literature

■ Material

- The slides of the lecture are intended as a standalone source for the course

■ Further reading:

- Smart Grid: Technology and Applications, 2012, ISBN 1119968682, Wiley, by Janaka Ekanayake, Kithsiri Liyanage, Jianzhong Wu, Akihiko Yokoyama, Nick Jenkins
- Smart Grid : Applications, Communications, and Security by Lars T. Berger and Krzysztof Iniewski
- Power System Analysis and Design, J. Dunkan Glover, Mulukuta S. Sarma, Thomas J. Overbye

■ Further Sources:

- Journals
 - IEEE Transactions on Smart Grid, *IEEE Transactions on Power Systems*, IEEE Transactions on Sustainable Energy