



ALBERT-LUDWIGS-  
UNIVERSITÄT FREIBURG

# Algorithms for Radio Networks

## Organization

University of Freiburg  
Technical Faculty  
Computer Networks and Telematics  
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# Organization

## ▶ **Web page**

- [https://cone.informatik.uni-freiburg.de/cone\\_teach/cone\\_teach\\_current/afrnws11](https://cone.informatik.uni-freiburg.de/cone_teach/cone_teach_current/afrnws11)

## ▶ **Forum**

- discussions, remarks, critics, funnies, etc.

## ▶ **Lecture**

- Tuesday 16:15-17:00, room 101/SR 01-016
- Wednesday 10:15-12:00, room 101/SR 01-016

## ▶ **Exercises**

- Tuesday 17:00-18:00, room 101/SR 01-016
- starts 08.11.2011

# Contents

- ▶ **Basis of Wireless Communication**
- ▶ **Cellular Networks**
- ▶ **Mobile Ad Hoc Networks**
  - Routing
  - Localization and mobility
- ▶ **Wireless Sensor Networks**
  - Medium Access, mobility, data aggregation, sensor coverage, energy
- ▶ **Network Coding and Security**
  - Network coding
  - Security

# Exam

## ▶ **Oral exam**

- a selection of exercise solutions may be used
  - for this solutions must be submitted in time
  - only relevant and correct solutions will be chosen
- otherwise closed book

## ▶ **Exam registration using HIS**

## ▶ **Questions in the exam**

- from the lecture and the exercises

# Online Documents

- ▶ **Online documents are only available within the university using a password which will be given out personally**
  - Lecturnity recordings
  - Exercises

# Literature

- Murthy, Manoj, Ad Hoc Wireless Networks, Prentice Hall 2004
- Ilyas, Mahgoub, Handbook of Sensor Networks: Compact and Wired Sensing Systems, CRC Press
- Agrawa, Zeng, Introduction to Wireless and Mobile Systems, Thomson, 2003
- Schiller, Mobile Communications, Addison-Wesley, 2000
- Karl, Willig, Protocols and Architectures for Wireless Sensor Networks, Wiley, 2005
- Zhao, Guibas, Wireless Sensor Networks – An Information Processing Approach, Morgan Kaufmann, 2004
- Yu, Prasanna, Krishnamachari, Information Processing and Routing in Wireless Sensor Networks, 2006
- Wu, Handbook on Theoretical and Algorithmic Aspects of Sensor, Ad Hoc Wireless, and Peer-to-Peer Networks
- Boukerche Handbook of Algorithms for Wireless Networking and Mobile Computing, CRC 2005
- Perkins, Ad Hoc Networking, Addison-Wesley, 2000
- research papers from the field