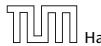


## Part I

### Organizational Matters



## Part I

### Organizational Matters

- ▶ Modul: IN2003
- ▶ Name: “Efficient Algorithms and Data Structures”  
“Effiziente Algorithmen und Datenstrukturen”
- ▶ ECTS: 8 Credit points
- ▶ Lectures:
  - ▶ 4 SWS  
Mon 10:00-12:00 (Room Interim2)  
Fri 10:00-12:00 (Room Interim2)
- ▶ Webpage:  
<https://www.moodle.tum.de/course/view.php?id=80009>

- ▶ Required knowledge:
  - ▶ IN0001, IN0003  
**“Introduction to Informatics 1/2”**  
“Einführung in die Informatik 1/2”
  - ▶ IN0007  
**“Fundamentals of Algorithms and Data Structures”**  
“Grundlagen: Algorithmen und Datenstrukturen” (GAD)
  - ▶ IN0011  
**“Basic Theoretic Informatics”**  
“Einführung in die Theoretische Informatik” (THEO)
  - ▶ IN0015  
**“Discrete Structures”**  
“Diskrete Strukturen” (DS)
  - ▶ IN0018  
**“Discrete Probability Theory”**  
“Diskrete Wahrscheinlichkeitstheorie” (DWT)

### The Lecturer

- ▶ Harald Räcke
- ▶ Email: raecke@in.tum.de
- ▶ Room: 03.09.044
- ▶ Office hours: (by appointment)

## Tutorials

- ▶ Omar AbdelWanis
- ▶ omar.abdelwanis@in.tum.de
- ▶ Room: 03.09.042
- ▶ Office hours: (by appointment)

## Tutorials

**One centralized tutorial session.**

Wednesday, 14:00-16:00

<https://tum-conf.zoom.us/j/63875503821>

Meeting ID: 638 7550 3821

Passcode: 719434

## 1 Contents

- ▶ Foundations
  - ▶ Machine models
  - ▶ Efficiency measures
  - ▶ Asymptotic notation
  - ▶ Recursion
- ▶ Higher Data Structures
  - ▶ Search trees
  - ▶ Hashing
  - ▶ Priority queues
  - ▶ Union/Find data structures
- ▶ Cuts/Flows
- ▶ Matchings

## 2 Literatur

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*The design and analysis of computer algorithms*,  
Addison-Wesley Publishing Company: Reading (MA), 1974
-  Thomas H. Cormen, Charles E. Leiserson, Ron L. Rivest,  
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-  Michael T. Goodrich, Roberto Tamassia:  
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## 2 Literatur

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*The art of computer programming. Vol. 1: Fundamental Algorithms*,  
3. Auflage, Addison-Wesley, 1997



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- Donald E. Knuth:  
*The art of computer programming. Vol. 3: Sorting and Searching*,  
3. Auflage, Addison-Wesley, 1997
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