

Advanced Algorithms

Design and Analysis

Dr. Alexander Souza

me@alexsouza.ch

- Instructor: Dr. Alexander Souza
- Homepage <http://www.alexsouza.ch> > Teaching
- Room: 2.A.01
- Lecture Tuesday: 8:00-9:30
- Exercises unregularly as given on homepage
- Further Information
 - <http://www.alexsouza.ch>
 - <mailto:me@alexsouza.ch>

- <http://www.alexsoouza.ch> > Teaching
- Details
- Agenda
- Lecture Notes
- Exercise Sheets
- Schedule
- Software
- Further Reading

- Unregularly
- Dates on course Homepage
- Start 10.3.2015
- Sheets out soon
- Admission to exam
 - Half of problems being worked on
 - Sincere attempt
- Hand in at exercise lesson, return the week after

- Available at course Homepage
- IBM/ILOG CPLEX Optimization Suite
 - Password: AdvancedAlgorithms
 - Platforms: Windows, Linux
- Tutorials
 - IBM Course Material
 - OPL Tutorials

1. Introduction
2. Greedy
Minimum Spanning Trees, Set Cover
3. Network Flows
Maximum Flows and Minimum Cuts, Edmonds-Karp Algorithm, Minimum Cost Flows
4. Matchings
Maximum Matchings, Blossom Algorithm
5. Knapsack
Greedy, Dynamic Programming, Fully Polynomial-Time Approximation Scheme
6. Makespan Scheduling
List Scheduling, Polynomial-Time Approximation Scheme, Unrelated Machines