

Selected Topics in Discrete Optimization

Seminar Preliminary Meeting

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Organizational details

- **Language:** English
- **Time and Room:** To be defined (presumably Thu. 14–16).
- **Website** <https://www-m9.ma.tum.de/SS2018/SemD0>
- **Registration**
 - 29 Jan–02 Feb 2018: First choice
 - 12–16 Feb 2018: Second choice
- **Credits:** 3 ECTS (satisfactory talk + participation)
- **Prerequisite:** Fundamentals of Convex Optimization (MA2504), Discrete Optimization (MA3502)

Topics

Integral Polyhedra, Integer Hull of Polyhedra

- Distance between optimums of ILP and its relaxation
- Total Dual Integrality
- Cutting Planes proofs, Chvatal Rank
- Integer Feasibility Problem (Lenstra's Algorithm)

Models, Cuts, Model-related approaches

- Lift-and-Project
- Mixed Integer Gomory Cuts
- Split Cuts
- Benders' Decomposition

Your talk

Preparation

- Express your interest in a topic and get assigned one.
- Read the suggested literature.
- Fix a meeting at least 3 weeks before the talk to ask questions and have feedback (*viviana.ghiglione@tum.de*).

Delivery

- 5-minute repetition of previous talk (by a student who is not presenting)
- 1-hour talk, to be presented at the blackboard or with the beamer.
- Get feedback from your peers

Next meeting: prepare a short introduction to your topic and present it.