Universität Hamburg
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Seminar „Airport and Airline Operations Planning“: Kick-Off

Prof. Dr. Malte Fliedner
Institut für Operations Management

Contact Info

Prof. Dr. Malte Fliedner

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Case Seminar

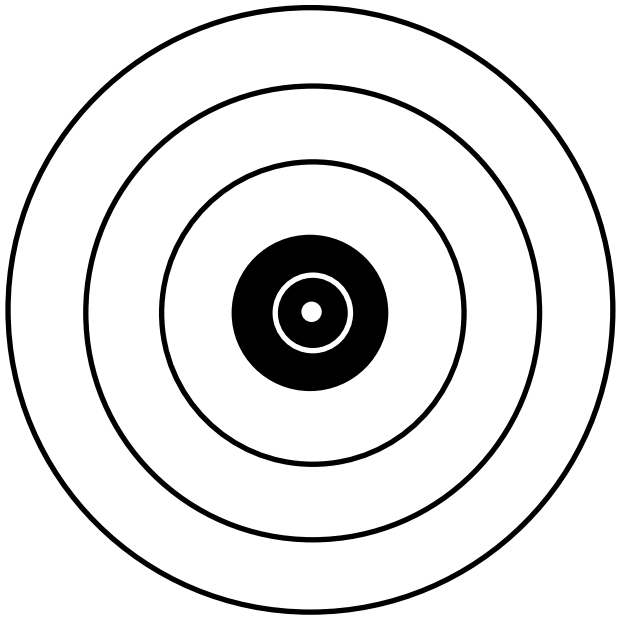
- In this seminar there is a “background project“ that ties the seminar theses together
- You will take up the role of consultants who instruct companies or institutional decision makers with the implementation of quantitative planning approaches for decision support
- Use the framework as a source of inspiration to develop illustrative examples and approaches which convince decision makers of your expertise

Overview over the Case: „Airline Operations decision Support with Generative A.I.“

- Cermedes AG is a consulting agency for airlines and with a special focus on optimization approaches and quantitative planning
- Their current project aims at figuring out how Generative A.I. models and LLMs can aid their clients in quantitative planning approaches
- Your task is to use Generative A.I. Models to analyse a relevant planning problem, develop a quantitavtive planning approach and evaluate its usefulness
- You will also assess the potential and limits of employing publicly available Generative A.I. Models for quantitative planning

Learning Outcomes

- Critical engagement with scientific literature
- Practicing of scientific writing
- Team work
- Presentation skills
- Generative A.I. models
- Quantitative Planning



Module Requirements

Students work in groups of 3-4 participants and are required to complete the following:

Written Seminar thesis (50% of final grade)

- 30-40 pages
- Written during term break and during the semester

Presentation of results and discussion (50% of final grade)

- 60 Minutes Presentation + 10-15 Minutes discussion
- Presentations as part of blocked weekend (03.-05.07.2026)

Both requirements need to be passed to successfully complete the seminar

Finding a seminar group

- Seminar groups consist of 3-4 Master-Students
- Each group nominates a “group leader“
- Group leader organizes appointments and communicates with supervisor
- If there are any problems in the group, please contact supervisor as soon as possible

Written Thesis

Deadline: Tue. 24.06.2026 until 11:00 Uhr as PDF via email to supervisor

30-40 Pages without attachments

Hints for thesis:

- Explain the relevance of your topic and systemize its role in quantitative planning
- Showcase how Generative A.I. helped you in devising a suitable planning approach
- Sources: Use at least 30 scientific sources (Journal articles, text books, dissertations, etc.)
- Explain formal or abstract topics with own illustrative examples as much as possible

Presentations

Midterm Presentation

- 10.04.2026 14:00 Uhr
- Room will be announced
- Max. 15 minutes overview of project, current state and challenges

Final Presentation

- Weekend between 03.07. and 05.07.2026
- Room and Dates will be announced
- Presentation is to be electronically submitted to supervisor on Thursday, 02.07.2026, 16:00 Uhr
- 60 Minutes + 10-15 Minutes moderated discussion
- Make sure every group member contributes equally
- Use illustrative examples for explanations (!)

Seminar Topics (Examples):

1. Airline Network Planning
2. Airline Fleet Planning
3. Crew Scheduling for Airlines
4. Maintenance Scheduling at Airlines
5. Pricing and Revenue Management at Airlines
6. …

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