

Planning and Optimization

A1. Organizational Matters

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A1.1 People & Coordinates

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A1.3 Course Content

A1.1 People & Coordinates

People: Lecturers



Malte Helmert



Gabriele Röger

Lecturers

Malte Helmert

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Gabriele Röger

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People: Assistant



Tanja Schindler

Assistant

Tanja Schindler

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People: Tutors



Clemens Büchner



Esther Mugdan

Tutors

Clemens Büchner

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Esther Mugdan

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Time & Place

Lectures

- ▶ **time:** Mon 14:15–16:00, Wed 14:15–16:00
- ▶ **place:** room 00.003, Spiegelgasse 1

Exercise Sessions

- ▶ **time:** Wed 16:15–18:00
- ▶ **place:** room 00.003, Spiegelgasse 1

first exercise session: today

Communication Channels

- ▶ lecture sessions (Mon, Wed)
- ▶ exercise sessions (Wed)
- ▶ course homepage
- ▶ ADAM workspace
- ▶ Discord server (invitation link on ADAM workspace)
- ▶ email

registration:

- ▶ <https://services.unibas.ch/>
- ▶ Please register today to receive all course-related emails!

Planning and Optimization Course on the Web

Course Homepage

`https://dmi.unibas.ch/en/studies/computer-science/
course-offer-fall-semester-25/
lecture-planning-and-optimization/`

- ▶ course information
- ▶ slides
- ▶ link to ADAM workspace
- ▶ bonus materials (not relevant for the exam)

A1.2 Target Audience & Rules

Target Audience

target audience:

- ▶ M.Sc. Computer Science
 - ▶ Major in Machine Intelligence:
 - module [Concepts of Machine Intelligence](#)
 - module [Methods of Machine Intelligence](#)
 - ▶ Major in Distributed Systems:
 - module [Applications of Distributed Systems](#)
- ▶ M.A. Computer Science (“Master-Studienfach”)
 - module [Concepts of Machine Intelligence](#)
- ▶ M.Sc. Data Science: module [Electives in Data Science](#)
- ▶ other students welcome

Prerequisites

prerequisites:

- ▶ general computer science background: good knowledge of
 - ▶ algorithms and data structures
 - ▶ complexity theory
 - ▶ mathematical logic
 - ▶ programming
- ▶ background in Artificial Intelligence:
 - ▶ Foundations of Artificial Intelligence course (13548)
 - ▶ in particular chapters on state-space search

Gaps?

↪ talk to us to discuss a self-study plan to catch up

Exam

- ▶ **written examination** (105 min)
- ▶ date and time: **January 28, 14:00–16:00**
- ▶ place: Biozentrum, room U1.131
- ▶ 8 ECTS credits
- ▶ admission to exam: 50% of the exercise marks
- ▶ final grade based on exam exclusively
- ▶ **no repeat exam** (except in case of illness)

Exercise Sheets

exercise sheets (homework assignments):

- ▶ solved in **groups of two or three** ($3 < 4$), submitted in ADAM
- ▶ weekly homework assignments
 - ▶ released Monday before the lecture
 - ▶ have questions or need help?
↪ assistance provided in Wednesday exercises
 - ▶ not sure if you need help?
↪ **start before Wednesday!**
 - ▶ due following Monday at 23:59
- ▶ mixture of theory, programming and experiments
- ▶ range from basic understanding to research-oriented

Programming Exercises

programming exercises:

- ▶ part of regular assignments
- ▶ solutions that obviously do not work: 0 marks
- ▶ work with existing C++ and Python code

Exercise Sessions

exercise sessions:

- ▶ ask questions about current assignments (and course)
- ▶ work on homework assignments
- ▶ discuss past homework assignments

Plagiarism

Plagiarism

Plagiarism is presenting someone else's work, ideas, or words as your own, without proper attribution.

For example:

- ▶ Using someone's text without citation
- ▶ Paraphrasing too closely
- ▶ Using information from a source without attribution
- ▶ Passing off AI-generated content as your own original work

Long-term impact:

- ▶ You undermine your own learning.
- ▶ You start to lose confidence in your ability to think, write, and solve problems independently.
- ▶ Damage to academic reputation and professional consequences in future careers

Plagiarism in Exercises

- ▶ You may discuss material from the course, including the exercise assignments, with your peers.
- ▶ **But:** You have to independently write down your exercise solutions (in your team).
- ▶ Help from an LLM is acceptable to the same extent as it is acceptable from someone who is not a member of your team.

Immediate consequences of plagiarism:

- ▶ 0 marks for the exercise sheet (first time)
- ▶ exclusion from exam (second time)

If in doubt: check with us what is (and isn't) OK **before submitting**
Exercises too difficult? We are happy to help!

Special Needs?

- ▶ We (and the university) strive for equality of students with disabilities or chronic illnesses.
- ▶ Contact the lecturers for small adaptations.
- ▶ Contact the Students Without Barriers (StoB) service point for general adaptations and disadvantage compensation.

A1.3 Course Content

Learning Objectives

Learning Objectives

- ▶ get to know theoretical and algorithmic foundations of classical planning and work on practical implementations
- ▶ understand fundamental concepts underlying modern planning algorithms and theoretical relationships that connect them
- ▶ become equipped to understand research papers and conduct projects in this area

Course Material

course material:

- ▶ slides (online)
- ▶ no textbook
- ▶ additional material on request

Git Repository

- ▶ We use a git repository for programming exercises and for demos during the lecture.
- ▶ Setting up the repository is your first task for the exercises.

Demo Examples

When working with the repository, go to its base directory:

Base Directory for Demos and Exercises

```
$ cd planopt-hs25
```

One-time demo set-up (from the base directory)
if the necessary software is installed on your machine:

Demo Set-Up

```
$ cd demo/fast-downward  
$ ./build.py
```


Under Construction...



- ▶ Advanced courses are close to the frontiers of research and therefore constantly change.
- ▶ We are always happy about feedback, corrections and suggestions!