Discrete Mathematics in Computer Science

A1. Organizational Matters

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University of Basel

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A1.1 Organizational Matters

People

Lecturers

Malte Helmert

- email: `malte.helmert@unibas.ch`
- office: room 06.004, Spiegelgasse 1

Gabi Röger

- email: `gabriele.roeger@unibas.ch`
- office: room 04.005, Spiegelgasse 1

Assistant

David Speck

- email: `davidjakob.speck@unibas.ch`
- office: room 04.003, Spiegelgasse 5

People

Tutors

- Maria Desteffani (maria.desteffani@unibas.ch)
- Pascal von Fellenberg (pascal.vonfellenberg@unibas.ch)
- Carina Schrenk (carina.schrenk@unibas.ch)
- Carina Fehr (carina.fehr@unibas.ch)

Target Audience

target audience:

- this is an introductory course on the Bachelor's level
- we cover mathematical foundations that are particularly useful for the computer science curriculum
- main target audience: B.Sc. Computer Science, 1st semester
- all other students welcome

Enrolment

- `https://services.unibas.ch/`
- official deadline: October 13
- better today, so that you get all relevant emails and access to the ADAM workspace

Discrete Mathematics Course on ADAM

ADAM

`https://adam.unibas.ch/`

- link to website with slides
- submission of exercise sheets
- model solutions for exercise sheets
- link to Discord server (for interaction among participants, but you also get answers from lecturers, assistant and tutors)
- additional material

Language

- The course is taught in English.
- All lecture material is in English.
- We (lecturers, assistant, tutors) speak German and English.
- You are also welcome to ask questions in German.
- Also exercise submissions can be in English or German.

Lectures

- Mon 16:15–18:00, Hörsaal U1.131, Biozentrum
  Wed 16:15–17:00, Hörsaal 1, Pharmazentrum
- first half of the course taught by Gabi Röger,
  second half by Malte Helmert
- on December 17: Q&A session for exam preparation

Exercises

Exercise sheets (homework assignments):

- mostly theoretical exercises
- exercise sheets on ADAM every Monday after the lecture
- must be solved in groups of two or three
  (not alone or in larger groups)
- due on the following Sunday (23:59)
  (upload to ADAM at `https://adam.unibas.ch/`)
- we only accept readable PDFs
  → with a bonus point per sheet created with LaTeX
  (template, cheat sheet and intro on ADAM)

Question: Who has experience with LaTeX?

Exercise Sessions With Tutors

Exercise Sessions (starting September 24/25/27)

Wed 17:15–18:00	Alte Universität, Seminarraum −201 with Carina S.
Wed 17:15–18:00	Spiegelgasse 1, Computer-Labor U1.001 with Pascal
Thu 17:15–18:00	Spiegelgasse 1, Seminarraum 00.003 with Maria
Fri 17:15–18:00	Pharmazentrum, Labor U1075 with Carina F.

- common mistakes/misconceptions
  (full model solutions on ADAM)
- questions about exercise sheets and the course
- as time permits, support while you solve the exercises

important: please fill in the survey on ADAM for the group allocation until Friday 12:00 (September 19).

Exam

- Written exam
- 6 ECTS credits
- Monday, January 19, 2026, 16:00-18:00
- Maurice E. Müller Saal, Biozentrum
- admission to exam: 50% of the exercise marks
- grade for course determined exclusively by the exam

Required Time

Official calculation

- 1 CP $\approx$ 30 hours
- The course has 6 CP.
- You need to invest about 180 hours.
- With 40 hours for exam preparation, this leaves 10–11 hours/week during the teaching period.

Alternative calculation

- A full-time student achieves 30 CP per semester.
- The course corresponds to 1/5 of 30 CP.
- With a 42h week, this still corresponds to 8.4 hours/week.

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.

A1.2 About this Course

Content: Discrete Mathematics in Computer Science

- mathematical thinking and proof techniques
- sets and relations
- group theory and permutations
- modular arithmetic
- graphs and trees
- formal logic

Learning Goals

- proficiency in abstract thinking
- ability to formalize mathematical ideas and arguments
- knowledge of common mathematical tools in computer science