Discrete Mathematics in Computer Science

Organizational Matters

Malte Helmert, Gabriele Röger

University of Basel

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

Florian Pommerening

- email: florian.pommerening@unibas.ch
- office: room 04.005, Spiegelgasse 1

People

Tutors

Clemens Büchner

- email: clemens.buechner@unibas.ch
- office: room 04.001, Spiegelgasse 5

Salomé Eriksson

- email: salome.eriksson@unibas.ch
- office: room 04.002, Spiegelgasse 1

Simon Dold

- email: simon.dold@unibas.ch
- office: room 04.001, Spiegelgasse 5

Target Audience

target audience:

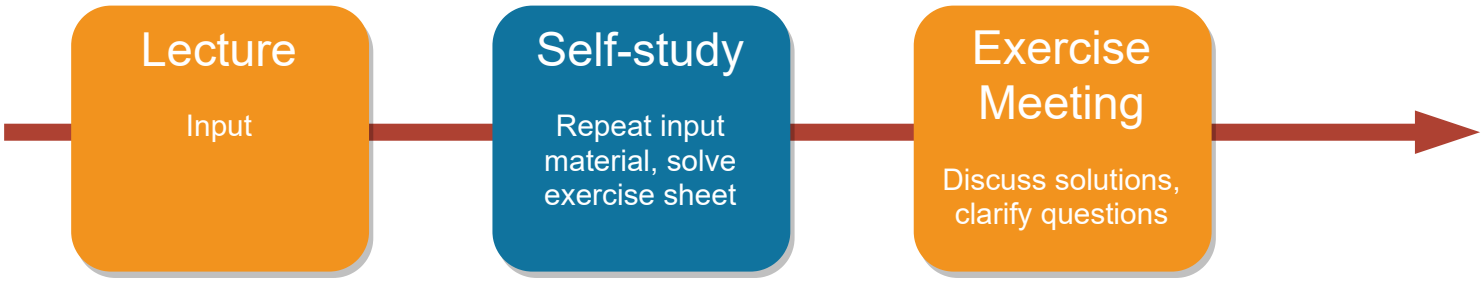
- this is an introductory course on the Bachelor's level
- we cover mathematical foundations that are particularly useful for the computer science curriculum
- main target audience: B.Sc. Computer Science, 3rd semester
- all other students welcome

prerequisites:

- basic programming skills

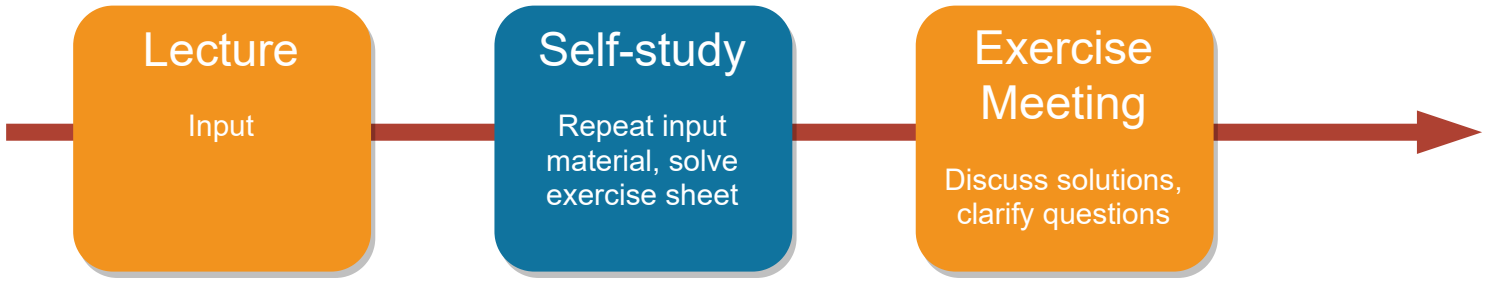
Flipped Classroom

Usual lecture week (we don't do this):



Flipped Classroom

Usual lecture week (we don't do this):



Flipped classroom:

Enrolment

- `https://services.unibas.ch/`
- deadline: October 17
- 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/`

- learning modules
- 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)

Plenary Meetings

- Wednesday 16:15-18:00, Lecture hall U1.141, Biozentrum
- with the lecturers
- bring your questions from the self-study phase
- on December 21: Q&A session for exam preparation

Exercises

Exercise sheets (homework assignments):

- mostly theoretical exercises
- some programming exercises

Exercises

Exercise sheets (homework assignments):

- mostly theoretical exercises
- some programming exercises
- exercise sheets on ADAM every Monday
- must be solved in groups of three ($2 \neq 3 \neq 4$)
- due Thursday the following week
  (upload to ADAM at `https://adam.unibas.ch/`)

Exercises

Exercise sheets (homework assignments):

- mostly theoretical exercises
- some programming exercises
- exercise sheets on ADAM every Monday
- must be solved in groups of three ($2 \neq 3 \neq 4$)
- due Thursday the following week
  (upload to ADAM at `https://adam.unibas.ch/`)
- we only accept PDFs created with LaTeX.
  Pictures may only be included if appropriate, not for creating a submission from photos of handwritten solutions.
  Question: Who has experience with LaTeX?

Exercise Sessions

Exercise Sessions (starting September 26)

Monday: 16:15–18:00

- group 1: Lecture hall -101, Alte Universität, with Clemens
- group 2: Seminar room 00.003, Spiegelgasse 1, with Salomé
- group 3: Seminar room 05.001, Spiegelgasse 5, with Simon

Exercise Sessions

Exercise Sessions (starting September 26)

Monday: 16:15–18:00

- group 1: Lecture hall -101, Alte Universität, with Clemens
- group 2: Seminar room 00.003, Spiegelgasse 1, with Salomé
- group 3: Seminar room 05.001, Spiegelgasse 5, with Simon

- questions about exercise sheets
- questions about the course
- support while you solve the exercises

Exercise Sessions

Exercise Sessions (starting September 26)

Monday: 16:15–18:00

- group 1: Lecture hall -101, Alte Universität, with Clemens
- group 2: Seminar room 00.003, Spiegelgasse 1, with Salomé
- group 3: Seminar room 05.001, Spiegelgasse 5, with Simon

- questions about exercise sheets
- questions about the course
- support while you solve the exercises

important: please send Florian an email with your team of 3 until Friday 16:00 (September 23).

Exam

- Written exam
- 6 ECTS credits
- Monday, 23 January 2023, 16:00-18:00
- Lecture hall U1.131, Biozentrum
- admission to exam: 50% of the exercise marks
- grade for course determined exclusively by the exam

Required Time

- 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.

Required Time

How to distribute the 10–11 hours/week? – an example

- 4 hours self-studying of input material (learning module)
- 2 hours exercises on Monday
- 2 hours plenum on Wednesday
- 2.5 hours additional time for homework

Plagiarism

Plagiarism (Wikipedia)

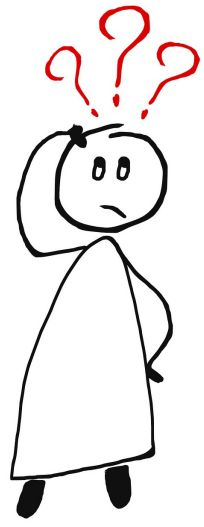
Plagiarism is the "wrongful appropriation" and "stealing and publication" of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work.

consequences:

- 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!

Questions on Organization



Questions?

Discrete Mathematics in Computer Science

About this Course

Malte Helmert, Gabriele Röger

University of Basel

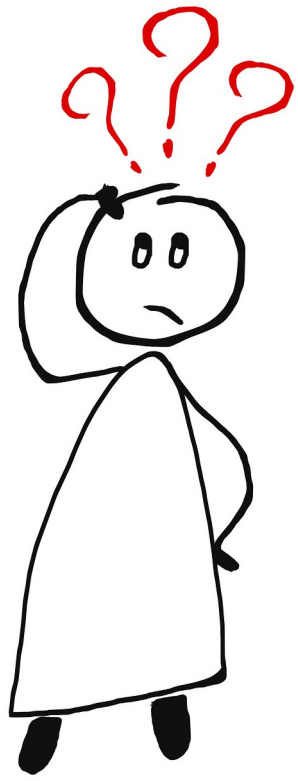
Content: Discrete Mathematics in Computer Science

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

Learning Goals

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

Questions about the Course



Questions?

Your Next Steps

- until Sep. 23, 16:00 form a team for the exercises and send Florian an email
- until Sep. 26, 16:00 study material on A2 in learning module
- Sep. 26–Oct. 3, 16:00 study material on A3 and B1
- Sep. 26 exercise session on A2
- Sep. 28 plenary meeting on A2
- Sep. 29 due date ex. sheet 1