

Discrete Algebraic Structures

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Winter Semester 2024/2025

Organisation of the module Every week, there is **1** lecture (90 minutes), **1** lecture hall exercise (45 minutes), and **1** tutorial (90 minutes) that you have to attend.

Lectures Monday 15:00 – 16:30 in **Audimax 1** (building H).

The lectures are recorded and the recordings will be available for one week after their publication.

First meeting: 20 October 2025

Last meeting: 26 January 2026

No meeting: 22 December 2025, 29 December 2025

Lecture Hall Exercise Wednesday 08:30 – 09:15 in **Audimax 1** (building H).

Use the lecture hall exercise to engage with the material more closely and get some practice. Those sessions are recorded and the recordings will be available for one week after their publication.

First meeting: 22 October 2025

Last meeting: 28 January 2026

No meeting: 24 December 2025, 31 December 2025

Tutorial Register for the group tutorial of your choice here on Stud.IP.

First meeting: Week of 20 October 2025

Last meeting: Week of 26 January 2026

Quizzes Every week starting from the week of October 27, a quiz will take place during the tutorial group for which you are registered. During this quiz, we will test your understanding of the content of the past week. There will therefore be **12** quizzes. In each quiz, you can earn up to **3 bonus points**.

Examination The examination date will be communicated during the semester. A registration in TUNE is **mandatory** in order to take the exam. Only the students who fulfill the examination requirements (explained below) are allowed to register for the exam.¹ The examination consists of a part with multiple choice questions to be completed on a computer as well as a problem solving part. You are allowed to bring **one DIN A4** sheet of handwritten notes with you for the exam, no other help (e.g., calculator, lecture notes, phone) is allowed.

Examination requirements and bonus points Each quiz gives you the chance to score up to **3 points**. Thus, you can get a total of **36 points** by completing all the quizzes. In order to take the exam, you must score a total of at least **16 points**.² Any additional point that you obtain will be added to your score at the final exam.

Points scored for quizzes	Consequence for the exam
< 16	Not allowed to take the exam
16	Allowed to take the exam, no bonus points
36	20 bonus points for the exam

How much time should I spend working on this course? A rule of thumb is to spend **at least 8 hours per week** engaging with the course material. This time is divided between active participation in the lectures (1.5 hours), the lecture hall exercise (45 minutes), the tutorials (90 minutes), the rest (i.e., more than 4 hours) spent on working on the material by yourself and completing the exercises. **There is no easy way** to your university studies: the only way to learn is by active participation.

¹This only applies to students who start their studies in the winter semester 24/25 or after.

²If you have started your studies in the winter semester 24/25 or after.

ChatGPT? Large language models are a great tool if you use them correctly. The current LLMs are not capable of answering all mathematical questions correctly and will make many mistakes. When you use an LLM, you therefore have to be very critical of the answer that you get. In fact, the suggested way to use LLMs for the exercises in this course is to use them to correct and give you feedback on **your own answers**. This way, you learn to fix your mistakes and prepare yourself better for the exam and for your future studies.

Help! If you are struggling with the content of the course even after spending the necessary time to study, **take action immediately**. The longer you wait, the harder it will be for you to catch up. Here is a list of things that you can (and should!) do, in order of priority:

1. Find a study partner.
2. Seek the help of the other students, tutors, and professor using the forum on Stud.IP.
3. Talk with your tutorial supervisor.
4. Talk to your professor: Make an appointment for the consultation hours on Stud.IP.

Additional material On top of the material provided by your teaching team, you can refer to the following books that deal with some or all of the concepts seen in this course:

- *Diskrete Strukturen Band 1: Kombinatorik, Graphentheorie, Algebra*, Angelika Steger
- *Diskrete Mathematik*, Martin Aigner
- additionally, Google and Wikipedia are very useful