Statistical Machine Learning
Prof. Ulrike von Luxburg, Summer Term 2026

General information as of 13. April 2026

Main source of information: Webpage

All material related to the course can be found on the following webpage. This includes general information, videos, slides, assignments, literature etc.

`https://www.tml.cs.uni-tuebingen.de/teaching/2026_sml/index.php`
The password for the protected material will be announced in the lecture.

Registration for the course

You need to register for the course at latest until **Wed, April 15, noon.** The link is on the webpage.

Registration for tutorials

Tutorials take place every week, starting from the second week in term. Please note that **regular participation in the tutorials is a mandatory requirement to be admitted to the exam.**

To register for the tutorials, take part in the survey on Ilias; The survey will be opened during the first lecture. Please indicate all tutorial groups that work for you. That makes it more likely that we can assign everyone to a group that works for them—and also that you end up in one of your preferred groups. **The deadline for the registration is: Wed, April 15, noon.**

Note that during registration you can nominate an assignment partner: Assignments will be handed in in groups of two students. If you already have a partner, both of you can mention each other in the Ilias registration form, so that you get assigned to the same tutorial (if possible); else you can find a partner in the first meeting of your tutorial group. Based on your preferences we will assign you to a tutorial by Friday, April 17. You can view your group assignment on Ilias.

In case you want to change your group later, you need to find another student with whom you can switch groups. Then contact one of the teaching assistants.

Contents and required skills

This course is intended for the students of the master programs in machine learning or computer science or related degrees. It requires a solid understanding of maths, for example as taught in the course on Mathematics of Machine Learning: Linear algebra, Mulitvariate analysis, Probability Theory, Statistics, Optimization. The course is not recommended for students without this background. We also assume that students can program in python, and that students already have attended some introductory lecture on machine learning. In this class, we will not explain many algorithms; we rather explain the statistical principles that need to be in place to enable machine learning.

Assignments

For every week there will be an assignment published on the course webpage. Some of the exercises are theoretical, some of them are implementation exercises in Python. We encourage you to work in groups to solve the exercises. To hand in the solutions, please form groups of two students (that is, two students jointly hand in solutions).

The weekly assignments are **due Mondays at noon**, to be handed in via the Ilias platform.

Note that working on the assignments is a good preparation for the exam, as exam assignments will be similar to homework assignments.

Exam admission

To pass the whole course, there are the following requirements:

- To be admitted to the final exam, **you need to attend at least** 9 **out of** 12 **tutorials** (documented by your signature during the tutorial). If you cannot attend several tutorials due to sickness or other reasons, please provide certificates to your teaching assistants.
- To be admitted to the final exam, you also have to achieve **at least 50 % of the points** in the weekly assignments, on average over the whole semester.

Your final exam grade determines the course grade.

Participants of previous years: if you have participated in the Statistical Machine Learning lecture last year and made already one attempt for the exam, but failed, then you will be re-admitted to the exam without re-taking tutorials and assignments. Exam admissions of 2024 or earlier are no longer valid.

Exams: Dates and modalities

There is going to be one exam at the beginning of the semester break and one at the end of the semester break (dates are not fixed yet because they are organized through a centralized process). You can choose yourself which of the two exams you would like to take, both of them will be equal in terms of difficulty. Note that there won't be a third exam: if you skip the first exam and are sick or fail in the second one, you need to wait a year to be able to take the exam again.

Generative AI Usage

The exercises are meant to help you understand the lecture contents and to prepare you for the exam. So please try to solve them yourself, rather than delegating to generative AI. We expect that you have written the submitted solutions yourselves and that you have understood everything that you submit. Solutions that are obviously generated by AI are banned and result in losing the exam admission.

Questions and answers

If you have a question, please try not to fire off emails to us right away. Please check our course website that we will regularly update with the newest information, ask your fellow students, or post your question in the Ilias Forum. You can also always approach us after the lecture or during the tutorials.

Suggestions, feedback, ...

If you have suggestions how to improve the lecture or tutorials, please do talk to us. In case you want to give anonymous feedback, you can use an anonymous online form, the link is on the course webpage.