

# STATISTICAL MACHINE LEARNING

PROF. ULRIKE VON LUXBURG, SUMMER TERM 2022

Information 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/2022\\_statistical\\_learning/index.php](https://www.tml.cs.uni-tuebingen.de/teaching/2022_statistical_learning/index.php)

Some material is password protected, we are going to send you the password by email (after you have registered). Please do not distribute the password protected material.

## Lectures

Lectures start on April 19, presumably in person:

- The lecture times and rooms are the following ones:
  - Tuesday 8:15 - 10:00, Hörsaal Mineralogie H102 (Lothar-Meyer-Bau);
  - Thursday 8:15-10:00, , Hörsaal 036 (Neuphilologicum).
- In case the covid situation does not allow a lecture in person, all registered participants will be notified via email about the exact substitute format and we will post the information on the course webpage.

**Important: you need to register for the lecture on Ilias, by the evening of April 20 at latest, on this link (can also be found on the course webpage):**

[https://ovidius.uni-tuebingen.de/ilias3/goto.php?target=crs\\_3601472&client\\_id=pr02](https://ovidius.uni-tuebingen.de/ilias3/goto.php?target=crs_3601472&client_id=pr02)

## Tutorials

We have several slots for tutorials. Please fill out the survey on Ilias, so that we can allocate everyone in a suitable time slot. In the poll, please choose *all* time slots that do not produce schedule conflicts for you, so that we find a solution to the assignment problem.

Assignments will be handed in in groups of exactly two students. If you already have a partner, both of you can mention each other in the Ilias poll, so that you get assigned to the same tutorial; else you can find a partner in the first meeting of your tutorial group. Tutorials do require your presence as solutions will not be handed out.

**Important: To get assigned to one of the tutorial sessions, please fill out the poll on Ilias by the evening of April 20. At latest on monday April 25 we will notify you by email regarding which group you got assigned to.** Tutorials start in the second week of the term.

## Assignments

For every week there will be an assignment (Übungsblatt) 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 exercises, please form groups of two students (that is, two students jointly hand in solutions). Note that both students need to be familiar with all the solutions their group submits, so they can present them in the tutorial sessions.

To solve the implementation exercises you will need to work with Python 3. In particular we will use Jupyter notebooks. We suggest that you use the Anaconda distribution, where Jupyter notebook and all required packages are already included. You can download it from the following link for Windows, Linux and Mac. Please use the version with Python 3.9.

<https://www.anaconda.com/download/>

If you do not want to use anaconda please install the following packages:

`numpy, scikit-learn, pandas, matplotlib, jupyter`

If the poll on Ilias suggests interest, we will give an introduction to Python in the tutorial session in the second week.

## Exam admission

To pass the whole course, there are two requirements:

- To be admitted to the final exam, you have to achieve at least 50 % of the points in the weekly assignments, on average over the whole semester.
- You have to pass the final exam (see below).

The final grade is going to be the one of the final exam.

Participants of previous years: if you have participated in the Statistical Machine Learning lecture last year (2021) and have passed the 50%-criteria for the assignments, you can get admitted to the exam without re-taking the assignments (if you would like to do this, please send us an email that contains your name, study degree, matriculation number). If you have participated in the course in 2020 or earlier, any exam admission has expired and you will need to re-take the assignments to be admitted to the exam.

Note that we are not going to provide any “official solutions” to the assignments — these will be discussed in the tutorial sessions. You are expected to attend the tutorial sessions and discuss your solutions.

## Exams

A written exam will take place at the end of the semester. A second one will take place in October 2022. You can choose yourself which of the two exams you would like to take. However, please note that in case you miss the exams, you cannot simply take an oral exam instead, you will have to wait until next year’s exams take place.

Once you passed the first exam, you cannot retake the second exam to improve your grade.

The general mode for exams is: You are not allowed to bring any material (books, slides, etc) except for what we call the controlled cheat sheet: one side (A4, one side only) of handwritten (!) notes, made by yourself.

## Questions and answers

If you have organizational questions regarding the lecture, tutorials and assignments, please ask them in the first lecture on Tuesday, April 19.

If you have a question, please read this information sheet carefully. Then check our course website that we will regularly update with the newest information. Next, have a look at our forum on Ilias, where we are going to answer your questions. The advantage of the forum is that somebody else might have had the same question before. So please first check if your question has already been asked or answered on the forum. If not, submit a new entry, and we will be happy to get back to you.

## Suggestions, feedback, ...

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