Course Report WASP Graduate School

Date: 2025-06-24
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Introduction to Mathematics for Machine Learning (4hp)
Semester: Spring 2025

Number of registered students: 14
Answering frequency (course evaluation): 29 (%)

Examination results

Number of students examined: 13
Fail: 0 (%)
Pass: 100 (%)
(One student did not hand in any homework assignments)

Brief summary of student viewpoints and suggestions

Results of WASP base-line quantitative questions

- What is your overall rating of the course (1-5) Average: 4.25
- Did you enjoy the course? (1-5) Average: 4.5
- Was it time well spent? (1-5) Average: 4.5

Answers to free text-questions to be (shortly) summarized under "Strengths" and "Weaknesses"

- What was the best aspect of the course?
- What would you suggest improving?
- What advice would you like to give to future participants?
- Other comments. Is there anything else you would like to add?

"Strengths" according to students[2]

- Good introductory course.
- Compact and clear format of course.
- Good lectures.

"Weaknesses" according to students[2]

- Sometimes hard to follow the lecture. Include more examples, to make the lectures less dense.

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[1] *The report should be written by the examiner together with the teachers and possibly others, such as teaching assistants*

[2] *Based on both quantitative results and key viewpoints from students' free-text answers*

Comments from teachers on the implementation and outcome of the course[3]

- The course setup was based on the setup of Yurii Malitskyii of three years ago. In general, this worked well. The very diverse background of students is a challenge. Many students have a rather high level of mathematical background, and for them the course is more of a refresher. Other students are not so strong in mathematics, and for them the course is more of a challenge. The instructor tried to adapt the pace and presentation to the group.
- The homework assignments were mapped to the two pairs of lecture days. Homework assignment 1 covered linear algebra and calculus, homework assignment 2 covered probability and optimization. There were 30 credits given to each of the four subtopics, and 10 required for a pass. There was a big spread of the results. For such a course, AF as instructor thinks this is an ok setup. There is an option to work more on the material, which many students did, or just make enough to pass with some margin, which some students did.
- Regarding deadlines for homework assignments. Deadlines were set, to give a pace of the course. Extensions were given if asked for, but a strict deadline of mid June 2025 was set and communicated. This setup worked well.
- All students that handed in both homework assignments passed. From an instructor point of view, AF is satisfied with this result. One student did not hand in any solutions to homework assignments.

Proposed changes/comments/measures

- The teaching was done by hand writing on an iPad. The slides were made available after the lecture. This worked and allowed some flexibility based on questions that came up.
- Overall, AF is satisfied with the outcome of the course. A similar setup might be used also in the future.
- The potential use of generative AI in the homework assignments is an issue which I did not regulate specifically this year. The students were allowed to cooperate. I stated that students must hand in their own original solutions. They were not allowed to make use of solutions made by others in any form.

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[3] *Including changes effected during the course*