

Linear Algebra I - Fall 2019

Course information

Homepage for this course: <http://www.henrikbachmann.com/la12019.html>. Please check this page regularly for updates in schedule and/or to get informations on the course and the homework.

Preliminary schedule

	Date, lecture	Tutorial (1b)	Preliminary Lecture topic	Section
1	7th Oct (Mo)	8th Oct (Tu) 15th Oct (Tu)	Linear systems, matrices, vectors	1.1–1.3
2	21th Oct (Mo)	22th Oct (Tu)	Linear systems, matrices, vectors	1.1–1.3
3	28th Oct (Mo)	29th Oct (Tu)	Sets and propositions	
4	9th Nov (Sat)	5th Nov (Tu)	Linear maps	2.1
5	11th Nov (Mo)	12th Nov (Tu)	Linear maps in geometry	2.2
6	18th Nov (Mo)	19th Nov (Tu)	Matrix multiplication	2.3
	25th Nov (Mo)		Midterm exam ☺	
7	27th Nov (We)	26th Nov (Tu)	The inverse of a linear map	2.4
8	28th Nov (Thu)		Subspaces of \mathbb{R}^n	3.1–3.2
9	2nd Dec (Mo)	3rd Dec (Tu)	The image and the kernel of a linear map	3.1–3.2
10	9th Dec (Mo)	10th Dec (Tu)	Bases and linear independence	3.2
11	16th Dec (Mo)	17th Dec (Tu)	Dimension	3.3
12	23rd Dec (Mo)	24th Dec (Tu) 14th Jan (Tu)	Coordinates	3.4
13	20th Jan (Mo)	21th Jan (Tu)	Orthogonal bases, the Gram–Schmidt algorithm	5.1–5.2
14	27th Jan (Mo)	28th Jan (Tu)	Least square approximation	5.1–5.2
	3rd Feb (Mo)		Final exam ☺	

Times and venues

- All **lectures** take place in the room **C35** in the Liberal Arts and Sciences building, between 10:30 am and 12:00 pm. All **tutorials** take place in the rooms **A407 and A408** in Science building A, between 2:45 pm and 4:15 pm.
- Lectures usually take place on Mondays, with the following exceptions:
9th Nov (Sat), 27th Nov (Wed), 28th Nov (Thu)
- Tutorials take place on Tuesdays.

Examination

The examination consists of a **midterm exam** and a **final exam**, together with **quizzes** and **homework**.

- The midterm exam is held on the 25th of November 2019, and the final exam on the 3rd of February 2020.
- **Quizzes:** A small quiz about the content of the previous lecture will be given at the beginning of some lectures.
- **Homework:** There will be a number of homework assignments during the course. Collaboration is encouraged, but solutions must be written and handed in individually. Students may be asked to present their solutions orally to the teacher, and the homework will be graded based on both the written solution and the oral presentation.

- **Repeat exam:** There will be a repeat exam during the winter vacation, for those who failed the ordinary examination. This will take place in the week 2nd March - 6th March 2020. No other re-examination of the course is offered during the academic year 2019/2020.

Grading

A total score (0–100 %) is calculated as the weighted average of the scores obtained on the different parts of the examination, as follows:

- **10 %** : homework
- **10 %** : quizzes
- **35 %** : midterm exam
- **45 %** : final exam

The final grade is determined by the total score:

S: 90–100%, **A:** 80–89%, **B:** 70–79%, **C:** 60–69%, and **F:** 0–59%.

This grade will be the final grade for **both** the Lecture and the Tutorial.

For students who just registered for the Lecture and **not** for the Tutorial it is possible to choose to not submit the homework. In this case the student needs to write an email to me **before the midterm exam (Nov. 25th)** to let me know that he/she chooses this option. In this case the grade for the Linear Algebra I course is calculated as follows:

- **10 %** : quizzes
- **40 %** : midterm exam
- **50 %** : final exam

Contact

Henrik Bachmann

Office: Graduate School of Mathematics Building, Room: 457

(<http://en.nagoya-u.ac.jp/map/index.html>, Building D3-4)

E-mail: henrik.bachmann@math.nagoya-u.ac.jp

Web page: <http://www.henrikbachmann.com>

Telephone: 052-789-2428

Please feel free to contact me at any time via email or come directly to my office. There are no "stupid questions" and asking a lot of questions will not influence your grade in any way.

Textbook

Otto Bretscher: *Linear Algebra with Applications*, 4th edition, Pearson 2009 (available at the Central and Science libraries).