

Linear Algebra

Winter 2025

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I am teaching this course for the first time so some wrinkles will need to be ironed out as we go along. There will be a few potentially unusual aspects to this course.

- **Declaration.** Given that this is a rather large class, you will be asked to explicitly sign a declaration stating that you will abide by certain rules, while in attendance.
- **Feedback.** At the end of each lecture, you will get two minutes to fill out an online feedback form for that lecture. Being honest in the feedback is encouraged and carries no negative repercussions. Not filling the feedback form, however, may be used to cancel your attendance—although we only intend to use this as a last resort. The idea is to get feedback early and adapt the teaching accordingly.
- **Recordings.** The lectures will be recorded and made available shortly after being delivered.
- **Sync.** To ensure we are not falling behind the other sections (for the same course), we may provide you with recordings for certain topics that couldn't be covered in class.

I hope you will enjoy the course and by the end of it, have a solid grasp of the subject.

Grading Plan

Type of Evaluation	Weight (%)
Assignments	30
Quiz	20
Two Exams (mid-semester and final)	50 (20 + 30)

Topics

Here is a tentative plan of the topics we intend to cover.

Textbook	Topic	Number of Lectures
Hoffman and Kunze	Linear Equations (Ch 1.1 to 1.6)	2 to 3
	Vector Spaces (Ch 2.1 to 2.6)	4 to 5
	Linear transformations (until isomorphisms; Ch 3.1 to 3.5)	4
	Linear functionals* + buffer	
Sheldon Axler	Ch 5 (5A, 5C, 5D, 5E)	3
	Ch 6 (6A, 6B, pseudo-inverse*)	3
	Ch 7 (7A-E, F*)	4
	Ch 9C (Determinant)	2

Textbooks

We will use the following textbooks for various parts of the course (you will be told explicitly which is being followed for which topic):

Sheldon Axler. *Linear Algebra Done Right*.
Kenneth Hoffman & Ray Kunze. *Linear Algebra*

Course page

I will maintain a GitHub page for all the content and we will use Moodle for evaluations and announcements.

- GitHub page: <https://donkeydocs.github.io/>
- Moodle: <https://courses.iiit.ac.in/>