

# 1. Course Introduction

- Basic course information
- Relationship with other courses
- Topics
- References
- Lecture notes
- Acknowledgments

# Basic info

**Course** EE263: Introduction to Linear Dynamical Systems

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**Web-page** [www.stanford.edu/class/ee263](http://www.stanford.edu/class/ee263)  
All class info, lecture notes, homeworks, solutions.

**Grading** Roughly: homework 20%, midterm 30%, final 50%.  
Weekly homeworks

# Relationship to other courses

## Prerequisites

- exposure to linear algebra (e.g., Math 103)

**Not needed**, but might increase appreciation:

- control systems
- circuits & systems
- dynamics

# Topics

- linear algebra and applications
- linear dynamical systems
- quadratic control and estimation

# References

complete notes will be handed out, so there is no required textbook.

the following books are good references:

linear algebra:

- Strang, *Linear Algebra and Its Applications*.
- Meyer, *Matrix Analysis and Applied Linear Algebra*.
- Axler, *Linear Algebra Done Right*.
- Trefethen and Bau, *Numerical Linear Algebra*.

dynamics:

- Luenberger, *Introduction to Dynamic Systems*.

# Lecture Notes

- should reduce note-taking in lectures.
- you will need to take some notes; clarifications and missing steps in derivations, and other topics that arise.
- printed notes + your notes should be sufficient; you may need to refer to textbooks for more explanations or different approaches.
- lectures will also sometimes use the blackboard, but will still mostly follow the printed notes. You will *not* need to copy everything down.
- give me feedback . . .

## Acknowledgments

- Most sections based on EE263 lecture notes by Stephen Boyd.