

# Proof-Based Math Readings

## Session: Numerical Linear Algebra

2025 Summer

**Zeki Akyol\***

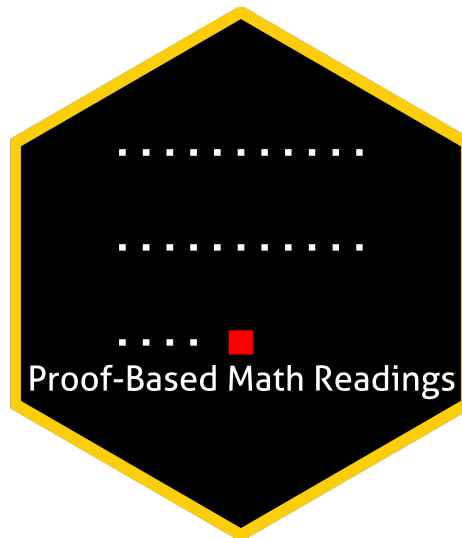
Department of Economics  
Istanbul Technical University

[Click here for the most recent versions of the syllabuses](#)

Version: 02 November 2024, 06:28 PM

### Table of contents

0	Motivation	2
1	Prerequisites	2
2	Format	2
3	Resources	2
3.1	Main Book	2
3.2	Supplementary	2
3.2.1	Proof Techniques	2
4	Reading Schedule	3
5	Further Readings (Optional)	3




---

\*[zekiakyol.com](http://zekiakyol.com)


## 0 Motivation

- *Proof-Based Math Readings* is a free, independent online reading group where we study the mathematics required for economics master's and PhD programs through an intuitive approach. Active since May 2023.
- This session of the reading group is on *Numerical Linear Algebra*.

## 1 Prerequisites

- CGPA: 3.00/4.00. Proof Techniques resources below.
- Please use the  **Application Form** to join our reading group; you will receive a response within a week.

## 2 Format

- This session takes 12 weeks. We do not have face-to-face/online meetings due to the size of the group.
- Members read the main book and discuss the topics/exercises in the Proof-Based Math Readings Discord .

## 3 Resources


### 3.1 Main Book

**Numerical Linear Algebra - Lloyd N. Trefethen, David Bau III (1997 or 2022)** is our main book because it is well-structured and well-written.

-  Numerical Linear Algebra - Lloyd N. Trefethen, David Bau III (1997 or 2022)
-  Numerical Linear Algebra - Lloyd N. Trefethen, David Bau III (1997 or 2022, Errata)
-  Numerical Linear Algebra - Lloyd N. Trefethen, David Bau III (1997 or 2022, Solutions by Youngdo Lee)













### 3.2 Supplementary

#### 3.2.1 Proof Techniques



-  Book of Proof - Richard Hammack (3.3 Edition, 2022)
-  Book of Proof - Richard Hammack (3.3 Edition, 2022, Playlist by Jeremy Teitelbaum)
-  Book of Proof - Richard Hammack (3.3 Edition, 2022, Playlist by Michael Penn)

## 4 Reading Schedule

- **NLA** is the abbreviation of **Numerical Linear Algebra** - Lloyd N. Trefethen, David Bau III (1997 or 2022).

 <b>NLA</b>	Week 01-02 
Part I: Fundamentals	
 <b>NLA</b>	Week 03-04 
Part II: QR Factorization and Least Squares	
 <b>NLA</b>	Week 05-06 
Part III: Conditioning and Stability	
 <b>NLA</b>	Week 07-08 
Part IV: Systems of Equations	
 <b>NLA</b>	Week 09-10 
Part V: Eigenvalues	
 <b>NLA</b>	Week 11-12 
Part VI: Iterative Methods	

## 5 Further Readings (Optional)

-  Matrix Computations - Gene H. Golub, Charles F. Van Loan (4th Edition, 2013)
-  [Matrix Computations - Gene H. Golub, Charles F. Van Loan \(4th Edition, 2013, Errata and M-files\)](#)