

# Proof-Based Math Readings

## Session: Numerical Linear Algebra\*

Zeki Akyol

Department of Economics

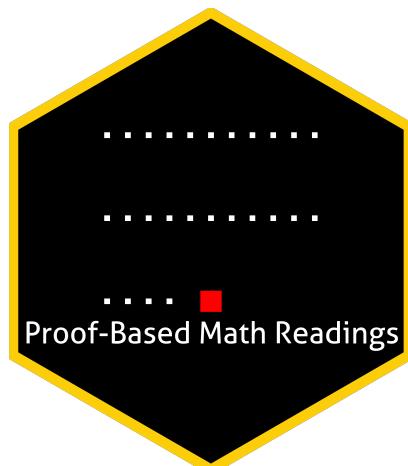
Istanbul Technical University

[Click here for the most recent version](#)

Version: 11 September 2025, 11:53 PM

### Table of contents

<b>0 Motivation</b>	<b>2</b>
<b>1 Prerequisites and Format</b>	<b>2</b>
<b>2 Resources</b>	<b>2</b>
2.1 Main Book . . . . .	2
2.2 Supplementary . . . . .	2
2.2.1 Proof Techniques . . . . .	2
<b>3 Reading Schedule</b>	<b>3</b>
<b>4 Further Readings (Optional)</b>	<b>3</b>



---

\*[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 and Format

- Proof Techniques resources below.
- Please use the [Application Form](#) to join our reading group; you will receive a response within a week.
- 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 .

# 2 Resources

## 2.1 Main Book

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

- ❑ 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)

## 2.2 Supplementary

### 2.2.1 Proof Techniques

- ❑ Book of Proof - Richard Hammack (3.4 Edition, 2025)
- ❑ Book of Proof - Richard Hammack (3.4 Edition, 2025, Playlist by Jeremy Teitelbaum)
- ❑ Book of Proof - Richard Hammack (3.4 Edition, 2025, Playlist by Michael Penn)

### 3 Reading Schedule

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

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

### 4 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)