

Proof-Based Math Readings

Session: Numerical Linear Algebra

2025 Summer

Zeki Akyol*

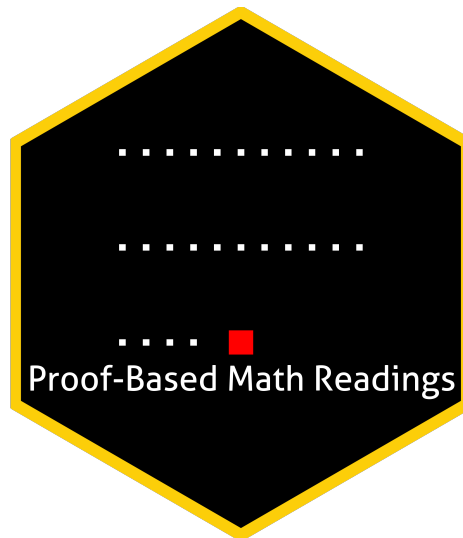
Department of Economics
Istanbul Technical University

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*zekiakyol.com


0 Motivation

- *Proof-Based Math Readings* is a free and independent online reading group where we study mathematics required in economics master's/PhD programs using an intuitive approach.
- 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.
- We discuss the topics and exercises at  **Proof-Based Math Readings [Discord]**.
- Members are expected to read the chapters from the book.

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).

 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	

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 \(4th Edition, 2013, Errata and M-files\)](#)