Proof-Based Math Readings
Session: Numerical Linear Algebra*

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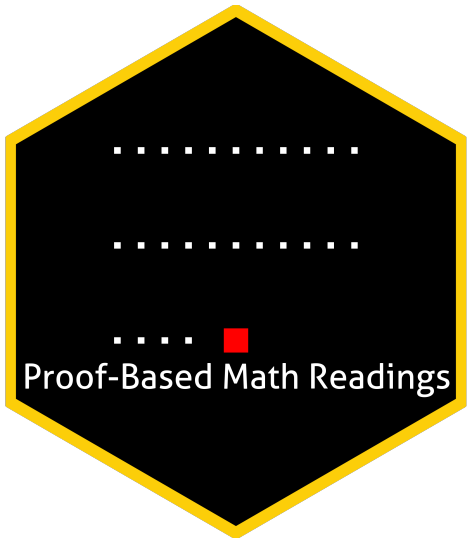
Table of contents



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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

- 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-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)

3.2 Supplementary

3.2.1 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)

4 Reading Schedule

- **NLA** is the abrevviation 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)