

Additional Learning Resources



This page provides supplementary materials related to our class, organized by topic. Some of these resources will be incorporated into lectures to enhance the slides, while others are available for independent exploration. Most of them are freely accessible online.

Calculus

1.  **Essence of Calculus – 3Blue1Brown** – A visual and intuitive approach to understanding calculus.
2.  **Geogebra Visualization of Partial Derivatives** – An interactive tool for visualizing partial derivatives.
3.  **Double Integrals Explained** – A video guide on understanding and solving double integrals.
4.  **Desmos Function Visualization Tool** – An online graphing calculator for exploring functions interactively.
5.  **Open-Source Calculus Textbook** – A comprehensive reference for calculus concepts and techniques.
6.  **The Structure of Economics: A Mathematical Analysis** by Eugene Silberberg and Wing Suen (*Available at Purdue Library*) – A rigorous approach to applying calculus in economic analysis.

Matrix Algebra

1.  **MIT OpenCourseWare: Linear Algebra – Gilbert Strang** – A highly regarded resource for learning linear algebra.
2.  **Essence of Linear Algebra – 3Blue1Brown** – A visually intuitive series explaining core linear algebra concepts.

3.  **3D Gradient Visualization – Geogebra** – An interactive tool for visualizing gradients in three dimensions.
4.  **Linear Algebra Concept Explained** – A clear and engaging video breaking down key linear algebra principles.

Optimization

1.  **Optimization: Coding and Visualization** – A practical guide to implementing optimization techniques with code.
2.  **Mathematical Methods for Economic Theory – Martin J. Osborne** – A freely accessible textbook covering optimization methods in economics.

Probability & Statistics

1.  **Introduction to Probability, Statistics, and Random Processes – Hossein Pishro-Nik** – A comprehensive, open-access textbook on probability and statistical methods.