Math 416: First Lecture
Advanced Applied Linear Algebra

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Bronfman B34
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Introduction and Objectives

Introduction / Objectives

Main Topic: Optimization: Linear Programming.

Objectives

- Obviously learn linear programming.
- Emphasize techniques / asking the right questions.
- Model problems and analyze model.
- Elegant solutions vs brute force.
- Writing textbook for AMS.

Types of Problems

- Diet problem.
- Banking (asset allocation).
- Scheduling (movies, airlines, TSP, MLB).
- Elimination numbers.
- Sphere packing....

My (applied) experiences

- Marketing: parameters for linear programming (SilverScreener).
- Data integrity: detecting fraud with Benford's Law (IRS, Iranian elections).
- Sabermetrics: Pythagorean Won-Loss Theorem.

Course Mechanics

Grading / Administrative

- HW: 15%. Preparing for Class: 5%. Writing: 25%. Class Presentation: 25%. Exams: 30%.
- Pre-reqs: linear algebra, analysis.

Office hours / feedback

- TBD and when I'm in my office (schedule online).
- Feedback ephsmath@gmail.com, password first 8 Fibonacci numbers (011235813).

Other

- Webpage: numerous handouts, additional comments each day (mix of review and optional advanced material).
- Opportunity to help write a book, let me know if need writing intensive.
- PREPARE FOR CLASS! Must do readings before each class.

Other: Advice from Jeff Miller

- Party less than the person next to you.

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Happy to do practice interviews, adjust deadlines....