Math 16: Linear Programming

Spring 2003

Dartmouth College

Instructor: David Little   **Office:** Bradley 411
Lecture: MWF 1:45-2:50, Bradley 103   **Office Hours:** MWF 10:00-11:30
X-period: Th 1:00-1:50, Bradley 103   **E-mail:** dlittle@dartmouth.edu
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Textbook: Vanderbei, Robert J., *Linear Programming: Foundations and Extensions*, 2nd Edition, 2001, Kluwer Academic Publishers.

Course Description:
This course will provide an introduction to one of several tools used in the field of operations research, namely linear programming. In short, a linear program refers to the problem of optimizing a linear function subject to numerous constraints. We will begin by learning precisely what a linear program is and how to translate real world problems into this paradigm. The simplex method is the standard technique for solving such problems. Our study of the simplex method will lead us into discussions of duality theory, implementation issues, measuring the efficiency of algorithms, and other related topics. Applications of linear programming will include game theory and network flows. Time permitting, we will also address integer programming and interior point methods.

Grading Policy:
The overall grade will be based on written homework (25%), 2 midterms (25% each) and a final exam (25%).

Homework Policy:
Homework will be assigned on a regular basis and is to be turned in at the beginning of class on the due date. Solutions should be written up in a clear and concise manner. No late homework will be accepted.

Academic Integrity:
Dartmouth students are expected to adhere to the honor principle. For this course, while collaboration on homework is encouraged, each person must hand in their own work. Students may not copy solutions from *any* source. The midterm and final examinations will be closed book and closed notes.

Students with Disabilities:
Students with disabilities who will be taking this course and may need disability-related classroom accommodations are encouraged to make an appointment to see their instructor as soon as possible. Also, they should stop by the Academic Skills Center in Collis Center to register for support services.

Important Dates:

Wed. March 26	First Day of Class
Wed. April 2	No Class
Thur. April 10	Class meets during x-period
Wed. April 23	**First Midterm, Time & Location: TBA**
Wed. May 14	Second Midterm, Time & Location: TBA
Mon. May 26	Memorial Day, No Class
Wed. May 28	Last Day of Class
Sun. June 1	Final Exam, 4-6pm, Location TBA

Do not make plans to leave Hanover on or before June 1st. The Final Exam will not be given early to accommodate travel plans.

Homework: Read Chapter 1 and Sections 1 and 2 of Chapter 2 for friday.