Introduction to Operations Research: Linear Programming

Economics 172A, Fall 2004

General Information

Instructor: Joel Sobel

Office: 311 Economics

Office Hours: Tuesday and Thursday, 8:15-9:15

Phone: (858) 534-4367

Warning: I will not answer my phone if a student is in the office.

Email: jsobel@ucsd.edu

Homepage (with link to handouts for course): http://www.econ.ucsd.edu/%7Ejsobel/172af04/172af04home.htm

Teaching Assistants:

Name	Office	Email	Office Hours
Jeff Lin	122 Econ	jelin@econ.ucsd.edu	Monday and Wednesday 11-12
Young Joon Park	123 Econ	ypark@ucsd.edu	Tuesday 11-1

You should direct email questions about course content to TA Young Joon Park.

Description

Economics 172A, Linear Programming, is the first course in the three-quarter Operations Research sequence. A linear program is a type of mathematical optimization problem. The class will introduce you to the problem, teach you how to formulate economic problems as linear programming problems, teach you how to solve these problems, and teach you how to interpret the solutions to these problems.

Course Material

I will follow the lecture notes that you can view and download from the class web page or at soft reserves. The notes concisely describe the main ideas of the class. They do not cover everything, nor do they give all of the details, but they will make lectures easier to follow. Tests cover only material discussed in lectures, lecture notes, and in problems.

The Bookstore also has copies of (HL) Hillier and Lieberman: Introduction to Mathematical Programming, McGraw-Hill, second edition, 1995. This book is a useful supplement. You should buy the book if you have trouble following the lectures or my notes. You should buy the book if you have more money than you can spend. Most of the material in the course is standard. You can find decent treatments in other sources. See me if you need advice. Hillier and Lieberman is also on reserve at the Social Science and Humanities Circulation Desk at Geisel Library.

Preparation

You should be comfortable with linear algebra, basic microeconomics, and the operation of a spreadsheet computer program. In order to enroll in the class you must have the requirements listed in the UCSD catalog.

Wait List

Apparently the class is fully enrolled and several students are waiting to enroll. The Economics Department office processes all drops and adds. Please contact them (Sequoia Hall 245) if you have questions. Students unable to enroll in this class should be relieved to know that Economics 172A is also offered in Winter 2005.

Grading

There will be in-class midterm examinations on Thursday, October 14 and Tuesday, November 9. There will also be an in-class final examination on Wednesday, December 8 from 8:00-11:00. I will determine your grade on the basis of your performance on the homework assignments (10%); two midterms (40%); and the final examination (50%).

I do not grade on a strict curve: I follow no rule that determines the fraction of the class that receives a particular letter grade. There is no strict percentage needed to attain a particular letter grade. Students frequently ask me to forecast their letter grade. I looked up my final distributions over the past few years are discovered that my highest distribution for this course (counting only students who took the final) was roughly 16% A, 41% B, 41% C, and 2% D and F while my lowest was: 12% A, 28% B, 44% C, 16% D and F. I will announce how these numbers translate into actual examination scores. I am providing this information as an experiment. My goal is to give everyone an A (on the basis of excellent performance).

How to Study

This course introduces a few ideas and mathematical techniques. You will need to learn the ideas and how to apply the techniques. Doing so requires practice. The web page (or the soft reserve package) has many old problems and exam questions (with solutions). The text also contains many good practice problems. Working these problems is the best way to prepare for the examinations. Old programs and homework assignments help you develop the skills needed to do well on exams. On examinations I usually want you to demonstrate that you understand how to solve problems and what the answers mean.

I will also assign homework problems that must be turned in. Most of these will involve using the computer. Standard spreadsheet programs now have the ability to solve linear programming problems. You will need Microsoft Excel ("solver" option must be installed) to do these assignments. The program is available on computers in the computation lab in Econ 100. There is no need to use the computation lab if you have access to the software. The notes contain some information about using Excel to solve linear programming problems. I will spend practically no time in lecture talking about the computer program.

Administrative Matters

Homework is due at the announced time. I will accept no late papers.

I will give no late examinations without compelling (and fully documented) medical excuses. I am generally unsympathetic to requests for special timing of examinations. I urge you to make every effort to come to examinations at the scheduled time.

You may use no other electronic devices during examinations. You may not consult notes, books, or your classmates' exam papers during the final or the midterms. You may discuss your homework assignment with your classmates. You must write answers independently.

I take violations of academic honesty seriously. Any act of academic dishonesty will be reported to your academic dean and be grounds for failure in the course. If you have any doubts about what constitutes academic dishonesty, please consult me.

Computer Accounts

If you do not have access to Excel, you will need a computer account to do some homework. I will distribute account information in class.