C&O 350
Course Title: Linear Programming

Lecturer:	Adrian Lewis	Henry Wolkowicz
Sections:	2/3	1
Course Times:	MWF 8:30/10:30	TR 11:30-1:00 at MC 1056
Office:	MC6054	MC6065
Office Hours:	M 1:30-2:30, F 2:30-3:30	M 11-12, F 1-2
Phone:	x(1)6983	x(1)5589
Email:	aslewis@orion	henry@orion
URL:		http://orion.uwaterloo.ca/~hwolkowi

TA:	Baoyan Ding	Georgina Scott	Serge Kruk	Zhike Jiang
Section:	1	2	2/3	2/3
Office:	MC5126	MC5168	MC5136A	MC5153
Office Hours:	W 9:30-11:30	R 1-3	TR 10-11	M 12-1
Phone:	x5260	x6427	x5334	x6008
Email:	bding@jeeves	gescott@jeeves	sgkruk@barrow	zjiang@barrow

Text :

AUTHOR: Chvatal, Vasek, 1946-
TITLE: Linear programming
IMPRINT: New York : W.H. Freeman, c1983.
CALL NUMBER: T57.74.C54 1983

Prerequisites : Math 235, Linear Algebra

Grading: 10 percent assignments; 25 percent midterm; 65 percent final.

A passing grade in the final exam is required to pass the course.

A missed assignment or midterm will be treated as a mark of zero unless the cause is illness (medical documentation required), or similar good reason given promptly in writing, in which case the corresponding weight will normally be transferred to the final exam.

Midterm: Wed. Mar 1, 7-9PM, in rooms MC2034,35,36,37. Students having a conflict can write the exam on the same day 5-7PM, in MC4041. Such students must obtain permission in advance from their instructor.

Assignments: There will be approximately 5 assignments. The emphasis will be on problem solving. The assignments are due on the stated date **at the beginning of class** unless another arrangement has been made with the instructor **in advance**.

Tests: The tests will cover the basic material covered in the lectures. It is important to know and understand the definitions and theorems.

The topics covered by the exams will include most of chapters 1, 2, 3, 5,7,8,9,10 of the text, This includes material on the revised simplex method, methods for solving general LPs, duals of general LPs (including complementary slackness conditions), theorems of the Farkas lemma type, sensitivity analysis, and integer programming as covered in the lectures.

There will be questions asking for definitions of concepts. You will be required to know the statements of all the theorems, and have an intuitive understanding of their proofs. You should be able to use them to derive simple consequences.

It is extremely important to attend classes, since some of the material will differ from the text.

Computing: For some parts of the course the matrix computation package MATLAB will be used. It is available on undergrad.math. If you have never logged on to your undergrad.math account, you should get your password by taking identification to MC 3011.

Course Rationale: This course is centered on the simplex method for linear programming. The aim of this course is to understand the basic principles and theory of linear programming.

Additional References:

1. G.B. Dantzig (1963) "Linear Programming and Extensions" This is the classical text on LP. When our text by Chvatal appeared, several reviewers stated that it is the first book with a solid contribution since Dantzig's book.
2. S.I. Gass (1975) "Linear Programming"
3. R.I. Rothenberg (1979) "Linear Programming"
4. D.G. Luenberger (1984) "Linear and Nonlinear Programming" Good insights and explanations for duality theory. In particular, see the interpretation of duality theory for the diet problem.

5. K.G. Murty (1983) "LINEAR PROGRAMMING" This is the encyclopedia of books on linear programming - that is the reason for the caps in the title. However, there are also lots of numerical examples.
6. M. Sakarovitch (1983) "Linear Programming"

Miscellaneous: Assignment solutions and copies of other course handouts will be available on hourly reserve in the Davis Centre Library. A MATLAB Primer is available by anonymous ftp at orion.uwaterloo.ca as the file pub/henry/matlab/primer41.ps.Z. You can also get this primer using MOSAIC with URL
ftp://orion.uwaterloo.ca/pub/henry/matlab/primer41.ps.Z.
Miscellaneous information files, such as assignments and solutions, are available using MOSAIC with URL
ftp://orion.uwaterloo.ca/pub/henry/teaching/w95/350.w95.
The newsgroup uw.co.co350 is for questions and discussions on linear programming.