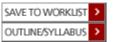
## 2012 Winter > <u>UBC Vancouver</u> > <u>MATH</u> > <u>MATH 340</u> >



#### **MATH 340 202 (Lecture)**

#### **Introduction to Linear Programming**

Linear programming problems, dual problems, the simplex algorithm, solution of primal and dual problems, sensitivity analysis. Additional topics chosen from: Karmarkar's algorithm, non-linear programming, game theory, applications.

**This course is eligible for Credit/D/Fail grading.** To determine whether you can take this course for Credit/D/Fail grading, visit the **Credit/D/Fail** website. You must register in the course before you can select the Credit/D/Fail grading option.

Credits: 3

Location: Vancouver

Term 2 (Jan 02, 2013 to Apr 05, 2013)

### Cr/D/F Grading Change Dates

Last day to change between Credit/D/Fail and percentage grading (grading options cannot be changed after this date): **January 14, 2013** 

#### **Withdrawal Dates**

Last day to withdraw without a W standing : January 14, 2013
Last day to withdraw with a W standing (course cannot be dropped after this date) : February 08, 2013

TermDayStart TimeEnd TimeBuildingRoom2Tue Thu11:0012:30BuchananB213

Instructor: Solymosi, Jozsef

## **DETAILED COURSE OUTLINE**

# Book Summary ?:

Title	Req'd/Opt/Rel	Author	ISBN
Linear Programming	Required	CHVATAL	9781429280518

Both sections of MATH 340 will cover the topics listed below. Here a "week" represents approximately 150 minutes of class time, not necessarily a calendar week.

week #1 intro to linear programming; objective function, constraints, feasible solutions, standard form of an LP.

week #2 dictionary; the simplex method; slack variables, (non-)basic variables, pivoting. week #3 tableau format; pitfalls in the simplex method, the Fundamental Theorem of Linear

**Week #3** tableau format; pitfalls in the simplex method, the Fundamental Theorem of Line Programming.

week #4,5 duality; the Duality Theorem, applications.

**week #6** Test #1.

week #7 Complementary Slackness, economic significance of dual variables.

week #8 LINDO

week #9 the Revised Simplex Method, matrix description of dictionaries.

week #10 the Duality Theorem, review, Test #2

week #11 sensitivity analysis

week #12 applications

# **CALENDAR**

Wed, Jan 2	Term starts	
Th, Feb 7	Midterm 1	
Mon, Feb 11	Family Day (university is closed)	
Feb 18-22	Winter break	
Tue, Mar 19	Midterm 2	
Fr, Mar 29	Good Friday (university is closed)	
Mon, Apr 1	Easter Monday (university is closed)	
Fr, Apr 5	Last day of classes	
TBA	Final Exam	

Links

Notes:

http://www2.isye.gatech.edu/~spyros/LP/LP.html

http://www.cs.uiuc.edu/~jeffe/teaching/algorithms/notes/25-lp.pdf

LINDO:

http://www.lindo.com