APM 236H1F Course Outline, Fall, 2012

Applications of Linear Programming

The website for this course:

`http://www.math.toronto.edu/cms/courses-2/` (click on APM 236H)

Hereafter this will be referred to a "the website".

Instructor: Paul Kergin, Sidney Smith room A1071. Telephone: (416) 978-3361. If no one answers, leave a message with the mathematics department at (416) 978-3323. Office hours: Mondays 1:10 pm – 2:00 pm, Fridays 1:10 pm – 2:00 pm, beginning 17 September.

Prerequisite: MAT 223H1 or MAT 240H1.

Text: Bernard Kolman and Robert E. Beck, Elementary Linear Programming with Applications, 2nd Edition, Harcourt, Brace, Jovanovich, publishers. A link to a copy of this book is provided in the website.

Additional Materials: Seven problem sets are available from the website, as well as their solutions. The website also has links to a collection of simplex and dual simplex examples. Some of these will be used extensively during certain lectures.

Marking Scheme: Two term tests, each worth 20% of the total mark, and a 3 hour final exam worth 60% of the total mark. Calculators are not allowed during the term tests and final exam. The times and locations of the term tests will be announced when they become available. It is intended that the term tests will be during regularly scheduled class times.

Course Summary (subject to change): A quick review of linear algebra (Chapter 0 in Kolman and Beck). Convex analysis and basic solutions (Chapter 1). The simplex method (Chapter 2), omitting "Big M Method", pages 147 – 150. Duality (Chapter 3), omitting "Now let us consider . . ." (page 197) to page 201 inclusive, §3.6, and §3.7.