

**THE UNIVERSITY OF HONG KONG
FACULTY OF BUSINESS AND ECONOMICS
SCHOOL OF BUSINESS**

BUSI0036 Quantitative Analysis for Business Decisions I (Semester I, 2008/2009)

PREREQUISITES

A course in statistical methods

TEXT

Render, B., R.M. Stair and M.E. Hanna, *Quantitative Analysis for Management* (10th Edition, Prentice Hall) with *POM-QM for Windows Version 3* and EXCEL QM software package.

Class notes will be posted on the course WebCT before each class meeting for you to download.

OBJECTIVES

This course is aimed to provide students basic quantitative methods in managerial decision making. It is designed to provide a feeling for the variety and power of quantitative methods, and to enable students to recognize on-the-job situations in which quantitative methods can be successfully employed. This first course will cover the development and applications of the most commonly used quantitative techniques in the field of business management. The approach to this course is conceptual as well as practical problem-solving. Through lectures, tutorials, and with the aids of microcomputers, students are expected to learn to formulate various mathematical models, and to develop, step-by-step, solutions to realistic business management problems.

COURSE OUTLINE

| | Topic | Week |
|----|--|-------|
| 1. | Introduction to Quantitative Analysis (Ch. 1) | 1 |
| 2. | Basic Probability Concepts & Statistical Distributions (Ch. 2) | 1/2 |
| 3. | Forecasting (Ch. 5) and Regression Models (Ch. 4) | 2/3 |
| 4. | Decision Theory (Ch. 3, M1-I, M3-I) | 4/5 |
| | a) Decision Making under Uncertainty/Risk (Ch. 3) | |
| | b) Decision Tree Analysis (Ch. 3) | |
| | c) Utility Theory (Ch.3) | |
| | d) Break-even Analysis (M3-I) | |
| | e) Multifactor Analysis (M1-I) | |
| 5. | Inventory Control Models (Ch. 6) | 6 |
| 6. | Queuing Theory (Ch. 14) | 7 |
| 7. | Simulation (Ch. 15) | 8/9 |
| 8. | Network Models (Ch. 12,13) | 9/10 |
| | a) Project Management (Ch. 13) | |
| | b) Minimal-spanning Tree (Ch. 12) | |
| | c) Maximal-Flow (Ch. 12) | |
| | d) Shortest-Route (Ch. 12) | |
| 9. | Linear Programming (Ch. 7-9) | 11/12 |
| | a) Formulation of Linear Programming Problems (Ch. 7) | |
| | b) Special Topics in LP Applications (Ch. 8) | |
| | c) Graphical Method (Ch. 7) | |
| | d) Simplex Method (Ch. 9) | |
| | e) Sensitivity Analysis and Duality (Ch. 9) | |

BASIS OF ASSESSMENT

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|---|-----|
| Attendance, and in-class performance | 10% |
| Midterm Test (1½ hours, closed book) | 15% |
| Final Examination (2 hours, closed book, formulas and normal distribution table will be provided) | 75% |

MID-TERM TEST

Date: 25th Oct 2008 (Sat) Time : 12:00 noon - 1:30 p.m. Venue : T1, Meng Wah Complex