

Ph

FE 1998
e. Jones

Syllabus
BU 3540
Quantitative Methods

"the object of computing is insight, not numbers"

Unknown

Since the early days of World War II, when teams of scientists were assembled in the United States and Great Britain to research mathematical approaches to operational problems, the use of quantitative analysis as a decisionmaking aid has expanded at an ever-increasing rate. Today, the techniques that have been developed are so well known to military planners, public administrators, businesspersons and others, that words such as model, cost-effectiveness, simulation and optimization, to mention only a few, are common in our everyday vocabulary. Indeed, it is difficult to imagine a problem of any significance that does not make use of quantitative methods to some extent.

Thus, the modern manager is faced with the compelling requirement to become and remain informed about the various approaches that may be used to conduct a quantitative analysis of his or her problem.

Course Objectives: This course will be an investigation of a number of statistical methods and quantitative methods. Emphasis will be on exposing the student to a number of methodologies that will be critical to further course work.

Textbook: Quantitative Analysis for Management, Barry Render & Ralph M. Stair, Jr., 1997

Schedule of Topics: The course will follow the following schedule. Material will be covered at a rapid pace, necessitating an extensive amount of work outside of class.

| | |
|---|----------|
| Introduction to quantitative methods. | Chap 1 |
| Statistical Quality Control | Chap 4 |
| Forecasting | Chap 5 |
| Test | |
| Linear Programming - Graphical & Computer | Chap 7-8 |
| Linear Programming - Simplex | Chap 9 |
| Test | |
| Inventory Control | Chap 6 |
| Network Models | Chap 12 |
| Project Management | Chap 13 |
| Queuing | Chap 14 |
| Test | |
| Simulation * | Chap 15 |

* If time permits

Grading: Tests 20% each
Final Project 40%

All tests will be open book and open notes. The final letter grade will be assigned by totaling the points from each graded item. No letter grades will be assigned for individual tests. A test or exam can be made up only if the instructor is notified before the exam. The final will be cumulative, with emphasis on the last section of material.

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Assignments:

| Chapter | Read | Problems |
|---------|------|----------------------|
| 1 | All | |
| 4 | All | 6,8,12,14, |
| 5 | All | 10,11,12,16,21,23,30 |
| 7 | All | 14,16,18,22,35 |
| 8 | All | 15,17,19 |
| 9 | All | 15,16,23,27 |
| 6 | All | 17,18,19,20,23,25,26 |
| 12 | ALL | 7,8,9,10,11,14 |
| 13 | All | 12,13,14,15,16,17,18 |
| 14 | All | 10,11,14,16 |