GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF ADMINISTRATIVE STUDIES
COURSE OUTLINE

J. Nutting

BA 1050 - BUSINESS MATHEMATICS AND STATISTICS 3(3-2)
F. 1993 - 94

TEXT:

Mathematics of Finance with Canadian Applications, S.A. Hummelbrunner, Prentic Hall.

Micro Economics, McConnell, Brue and Barlero, 6th Canadian Edition, McGraw Hill.

PREREQUISITE:

Math 20 or Math 33

COURSE DESCRIPTION:

Emphasizes a range of mathematical calculations used in business. Introduction to simple interest, compound interest, annuities, amortization, sinking funds, statistical methods and probability theory. Introduces students to managerial economics with emphasis on demand, supply, production and costs. Practical applications will be emphasized in the course.

COURSE OBJECTIVES:

To provide students with a knowledge of managerial mathematics, introductory statistics and managerial economics. This course in conjunction with BA 1510 give the CGA and CMA exemption in Economics. In conjunction with BA 2060 the course provides an exemption in CGA Managerial Statistics 203 and CMA Quantitative Methods 332.

GRADING:

Mid-term Exam	30%
Final Exam	40%
Assignments	30%

COURSE CONTENT:

1.0 Simple Interest and simple discount
- a) Interest
- b) Simple Discount
- c) Promissory notes

2.0 Compound Interest
- a) Finding the compound amount
- b) Finding the present value
- c) Equivalent rates
- d) Continuous compounding
- e) Finding the interest rate

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- f) Finding the time
- g) Equations of value

3.0 Simple Annuities
- a) Present value
- b) Amount
- c) Annuity due
- d) Periodic payments
- e) Number of payments
- f) Finding the interest rate

4.0 General Annuities
- a) Introduction
- b) Present value
- c) Amount
- d) General annuity payment
- e) Interest rate
- f) Mortgages

5.0 The Nature of Statistics
- a) Random sampling
- b) Randomized experiments
- c) Observational studies

6.0 Descriptive Statistics
- a) Frequency tables
- b) Centre of distribution
- c) Spread of a distribution
- d) Statistics by computer
- e) Linear transformations
- f) Relative frequencies

7.0 Probability
- a) Introduction
- b) Probability models
- c) Compound events
- d) Conditional probability
- e) Independence
- f) Bayes Theory

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8.0 Graphing Supply and Demand Concepts
- a) Graphing equations and inequalities
- b) Solving equations for unknowns
- c) Equations and inequalities in break even analysis
- d) Supply and demand concepts

9.0 Managerial Functions
- a) The firm and industry
- b) The demand and supply curve
- c) Social value and social cost
- d) Market structure
- e) Organizational roles
- f) The definition of profits
- g) Revenue and cost functions as management information
- h) Decisions balancing risk and return
- i) Decision trees

10.0 Elements of Demand
- a) The demand curve
- b) Price elasticity
- c) Demand functions
- d) Income and crosselasticity of demand
- e) Forecasting demand

11.0 The Production Decision and Cost Theory
- a) The production function
- b) Production function with a single or variable input
- c) The optimization rule
- d) Economics of scale and scope
- e) Technological change
- f) Costs
- g) Changing the organizations
- h) Product mix
- i) Production and cost decisions
- j) Cost functions
- k) Planning curves
- l) Break even analysis

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12.0 The Pricing Decision
- a) Pricing and marketing
- b) Alternative market structures
- c) Pure competition
- d) Monopoly
- e) Monopolistic competition
- f) Oligopoly
- g) Multiple pricing strategies
- h) Transfer pricing
- i) The legal environment of pricing