

Professor : Koen Lefever

Semester / Year : Spring 2011 Course Number : MTH140E
Course Title Mathematics for business and economics

Prerequisites

High school mathematics

Objectives

MTH 140E teaches the mathematical skills required for problem solving and decision making in the business world through use of mathematical models and specialised techniques. Topics include: functions as mathematical models, equation-solving techniques, differential and integral calculus, exponential growth and time-value of money and partial derivatives and their applications in economic functions.

Outline of Content

- * Linear Equations (chapter 1 in handbook)
 - o algebra
 - o graphs of linear equations
 - o intersection of linear equations
 - o modeling of supply and demand analysis, national income determination
- * Non Linear Equations (chapter 2)
 - o quadratic, exponential and logarithmic equations
 - o modeling of revenue, cost and profit
- * Mathematics of Finance (chapter 3)
 - o percentages and interests, compound interest
 - o investment appraisal
- * Differentiation (chapter 4)
 - o rules of differentiation
 - o marginal functions and elasticity
 - o optimization of economic functions
- * Partial Differentiation (chapter 5)
 - o functions of several variables
 - o partial marginal functions and elasticity
 - o Lagrange multipliers
- * Integration (chapter 6)
 - o indefinite integration
 - o definite integration
- * Linear Programming (chapter 8)

Teaching and Assessment methods

Requirements (% of final mark)

Attendance	10%
Class tests	30%
Midterm examination	30%
Final examination	30%

Major Reading

Mathematics for Economy and Business by Ian Jacques, Financial Times/Prentice Hall

