Business Mathematics

Course Description

Mathematics is one of the foundational courses in the field of Business Studies and provides access to quantitative methods across disciplines. These basics are required in a variety of other courses and modules, for example in the field of investment and finance theory, micro- and macroeconomics, logistics or marketing, to name some examples. Consequently, mastery in Business Mathematics is a prerequisite for business economists and political economists alike to gain access to more advanced content. Following this approach, this course in Business Mathematics focuses on the economic application of mathematical methods.

Contents

1. Basics of Analysis
   1. Arithmetic and Algebraic Basics
   2. Sums and Products
   3. Equations
   4. Inequalities
2. Functions
   1. Introduction
   2. Forms of Data Depiction
   3. Features of Functions
   4. Basic Function Types
   5. Selected Economic Applications
3. Differential Calculus I
   1. Difference and Differential Quotient
   2. Derivative Methods
   3. Higher Derivations
   4. Meaning of First and Second Derivation
4. Differential Calculus II: Applications
   1. Marginal Analysis
   2. Curve Sketching
   3. Cournot Point
5. Multivariate functions
   1. Linear and Non-Linear Multivariate Functions
   2. Partial Derivatives
   3. Determination of Extreme Values
   4. Determination of Extreme Values Subject to Constraint
6. Sequences and Series

6.1 Arithmetic and Geometric Sequences

1. Arithmetic and Geometric Sequences
2. Financial Mathematical Applications
3. Integral Calculus

7.1 Indefinite Integrals

1. Definite Integrals