

SEMESTER-VI

1.14 Mathematics for Economics and Finance

Generic Elective - V(B)

BS:502(B)

Theory: 4 credits and Tutorials: 0 credits
Theory: 4 hours /week and Tutorials: 1 hours /week

Objective: Many models and problems in modern economics and finance can be expressed using the language of mathematics and analysed using mathematical techniques. The aim is to show how a range of important mathematical techniques work and how they can be used to explore and understand the structure of economic models.

Outcome: Student were chiefly interested in learning the mathematics that had applications to economics and finance. Students gain a familiarity with economics and finance principles and are confident in applying them.

Unit- I

Linear Equations: Introduction – Solution of Linear Equations – Solutions of Simultaneous Linear Equations – Graphs of Linear Equations – Budget Lines – Supply and Demand Analysis .
Quadratic Equations: Introduction – Graphs of Quadratic Functions – Quadratic Equations - Applications to Economics.

Unit- II

Functions of a Single Variable: Introduction – Limits – Polynomial Functions – Reciprocal Functions – Inverse Functions. **The Exponential and Logarithmic Functions:** Introduction – Exponential Functions – Logarithmic Functions – Returns to Scale of Production Functions – Compounding of Interest.

Unit- III

Matrices and Determinants: Introduction – Matrix Operations – Solutions of Linear Systems of Equations – Cramer's Rule – More Determinants – Special Cases.

Unit-IV

Linear Difference Equations: Introduction – Difference Equations – First Order Linear Difference Equations.

Text:

- Vassilis. C. Mavron and Timothy N. Phillips, *Elements of Mathematics for Economics and Finance*; Springer Publishers.