

C O N T E N T S

Module 1 Linear Models

Input-Output Model: basic concepts and structure of Leontief's open and static Input-Output model; solution for equilibrium output in a three industry model; The closed model.

Module 2 Second and Higher order derivatives

Technique of higher order differentiation; Interpretation of second derivative; Second order derivative and curvature of a function; Concavity and convexity of functions; Points of inflection.

Module 3 Differentials and Total Derivatives

Differentials and derivatives; Total differentials; Rules of differentials; Total derivatives; Derivative of implicit functions.

Module 4 Single and Multivariable Optimisation

Optimum values and extreme values; Relative maximum and minimum; Necessary versus sufficient conditions—First and Second derivative tests; Economic applications thereof, First and Second order condition for extremum of multivariable functions; Convex functions and convex sets.

Module 5 Optimisation with Equality Constraints

Effects of a constraint; Finding stationary value—Lagrange—Multiplier method (Two variable single constraint case only); First and Second order Condition; The Bordered Hessian determinant.

Sample Paper