
SEMESTER I

4 Papers**Total 100 x 4 = 400 Marks****I. COMPULSORY FOUNDATION COURSE [FCECO101]:**

(Credits: Theory-05)

Marks: 30 (MSE: 20Th. 1Hr + 5Attd. + 5Assign.) + 70 (ESE: 3Hrs)=100**Pass Marks (MSE:17 + ESE:28)=45*****Instruction to Question Setter:******Mid Semester Examination (MSE):***

There will be **two** groups of questions in written examinations of 20 marks. **Group A is compulsory** and will contain five questions of **very short answer type** consisting of 1 mark each. **Group B will contain descriptive type five** questions of five marks each, out of which any three are to be answered.

End Semester Examination (ESE):

There will be **two** groups of questions. **Group A is compulsory** and will contain two questions. **Question No.1 will be very short answer type** consisting of five questions of 1 mark each. **Question No.2 will be short answer type** of 5 marks. **Group B will contain descriptive type six** questions of fifteen marks each, out of which any four are to be answered.

Note: There may be subdivisions in each question asked in Theory Examinations

The Mid Semester Examination shall have three components. (a) Two Semester Internal Assessment Test (SIA) of 20 Marks each, (b) Class Attendance Score (CAS) of 5 marks and (c) Class Performance Score (CPS) of 5 marks. “**Best of Two**” shall be applicable for computation of marks for SIA.

(Attendance Upto 75%, 1 mark; 75 < Attd. < 80, 2 marks; 80 < Attd. < 85, 3 marks; 85 < Attd. < 90, 4 marks; 90 < Attd, 5 marks).

ELEMENTARY MATHEMATICAL ECONOMICS**Theory: 60 Lectures; Tutorial: 15 Hrs****Module I: Sets, Limits and Functions**

Sets, Sets Operations, Finite and Infinite Sets, Cartesian Product, Relations, Functions, Limits of a Function, Continuity, Graphical Representation of Functions, Functions in Economic theory.

Module II: Differentiation

Derivative of a Function – Elementary Properties of Derivatives, Rules of Differentiation, Exponential And Logarithmic Function, Derivatives of Higher Order, Application of Simple Derivation (Total Marginal And Average Functions), Concept of Elasticity, Interrelationships Among Total, Marginal And Average Cost And Revenues.

Module III: Integration

Integration as the inverse process of differentiation, standard forms and properties of integrals – Integration by the methods of substitution, Integration by algebraic & trigonometric function Integration by parts, Integration of exponential function, logarithmic function, Application in consumers surplus.

Module IV: Maxima and Minima

Partial Derivatives – First and Second order, Increasing and Decreasing Function, Convexity of Curves, Maxima and Minima of function of one variable and two variables.

Module V: Matrices and Determinants

Algebra of vectors, Matrices: Concept, their types, Determinant Matrix inversion and rank of matrix, Matrix Solution of simultaneous equation.

Module VI: Linear Programming

Solution of Linear Programming by Graphical Method.

Module VII: Elementary Theory of Games, Two person Zero Sum Game, Pure and Mixed strategy.

Basic Reading List

- ☐ A.C. Chiang – Fundamentals of Mathematical Economics, McGraw Hill, New York.
 - ☐ Aggarwal, S.C. & R.K. Rana - Basic Mathematics for Economics, V.K. Enterprise, New Delhi.
 - ☐ R.G.D Allen. – Mathematics for Economics, Mc Milan Press.
 - ☐ Taro Yamane – Mathematics for Economics – An Elementary Survey Prentice Hall of India, Pvt. Ltd. New Delhi.
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