

Syllabus for Mathematical Economics and Statistics

Master's

Section 1: Subject Knowledge

Please Note: A Total of 40 Questions will be asked, combining the following topics, with the difficulty level commensurate to a Master's Candidate.

Unit I: Microeconomics Theory

Consumer Behaviour, Theory of Production and Costs, Game Theory – Non-Cooperative games, Market Structures, competitive and non-competitive equilibria and their efficiency properties.

Unit II: Macroeconomics

National Income: Concepts and Measurement, Determination of output and employment, Classical & Keynesian Approach, Consumption Function, Investment Function.

Unit III: Basic Econometrics

Linear Regression Models and their properties – BLUE, Statistical Inferences, Hypothesis testing, Violation of BLUE.

Unit IV: Foundations of Mathematics

Axioms, Paradox, Set Theory.

Unit V: Statistical Methods

Probability Theory, Descriptive Statistics, Sampling Methods, Index Numbers.

Unit VI: Theory of Numbers

Prime Numbers, Roots, Powers, Proof-based questions.

Unit VII: Differential Equations

Differential Equation, types and formulas.

Unit VIII: Algebra

Algebra, Field Extensions, Algebraic Equations and Roots and Series.

Unit IX: Finance, Banking and Secondary Market

Central Bank and Commercial Banking, Instruments and Working of Monetary Policy and Non-banking Financial Institutions, Capital Market, Indian Economic History.

Unit X: Mathematical Methods for Economics

Differentiation or Integration Topic, Set Theory, Functions Relations, Matrices, Constraints and conditions.

Section 2: Fundamental Skills

Please Note: A Total of 24 Questions will be asked, combining the following topics, with the difficulty level commensurate to a Master's Candidate.

1. Microsoft Office
2. Data Analysis
3. Case Study Analysis
4. Critical Reasoning and Comprehension

Section 3: Specific Skill Proficiency

This section has more than 30 skills. You can select the ones you are proficient in from the enrollment form. You can choose a maximum of 4 skills. Each skill contains 10 questions.

