# SYLLABUS FOR MSQE
## (Program Code: MQEK and MQED) 2017

**Syllabus for PEA (Mathematics), 2017**

**Algebra:** Binomial Theorem, AP, GP, Series, Permutations and Combinations, Theory of Polynomial Equations.

**Linear Algebra:** Vector spaces, linear transformations, matrix representations and elementary operations, systems of linear equations.

**Calculus:** Functions, Limits, Continuity, Differentiation of functions of one or more variables. Unconstrained Optimization, Definite and Indefinite Integrals: Integration by parts and integration by substitution. Convexity and quasi-convexity. Constrained optimization of functions of not more than two variables. The implicit function theorem, homogeneous and homothetic functions.

**Elementary Statistics:** Elementary probability theory, measures of central tendency, dispersion, correlation and regression, probability distributions, standard distributions-Binomial and Normal.

**Syllabus for PEB (Economics), 2017**

**Microeconomics:** Theory of consumer behaviour, theory of production, market structure under perfect competition, monopoly, price discrimination, duopoly with Cournot and Bertrand competition, public goods, externalities, general equilibrium, welfare economics.

**Macroeconomics:** National income accounting, simple Keynesian Model of income determination and the multiplier, IS-LM Model, models of aggregate demand and aggregate supply, money, banking and inflation, Phillips Curve, elementary open-economy macroeconomics, Harrod-Domar, Solow, and optimal growth models.