SUBJECT NO-HS60020, SUBJECT NAME- MATHEMATICAL ECONOMICS
LTP- 3-0-0,CRD- 3

SYLLABUS :-

Module I: Applications of Functions, Limits and Derivatives [7]Concept of margin and its importance in Economics.Theorems relating to Demand function, Elasticity of demand and supply.Jacobian Determinants and comparative static analysis in economicsHomogenous functions: Demand function and money illusion, Types of production functions (CobbDouglas, SMAC, Linearly homogenous production functions) and their properties.Module II: Optimization in Economics [7]Economic applications of optimization with one variable and optimization with multiple variablesApplication areas: Profit Maximisation, Price discrimination, Multi-product firm, Multi-marketequilibrium.Module III: Constrained optimization in Economics [11]Applications of constrained optimisation to consumer choice and firm theory, Quasi-concavity andits economic implications, Bordered Hessian Determinants and its economic applications.Cramer's Rule and its applications: Decomposition of Slutsky equation, ISLM models, Leontief InputOutputModel.Module IV: Basic game theory and its applications [8]Concepts of Dominance, Nash equilibrium, Pure and Mixed Strategy, Cournot and Bertrand models,Cartel formation, Stackelburg model.Module V: Lagged models [5]Lagged models and market equilibrium, Simple Cobweb model, Incorporating Inventory, Priceceilings; Harrod Domar growth model; Multiplier Accelerator model.TEXT1. M. Pemberton and N. Rau (2016) Mathematics for Economists, Manchester University Press.2. A.K. Chiang and Kevin Wainwright (2005) Fundamental methods of Mathematical Economics,McGraw Hill.3. Eugene Silverberg (2000) The Structure of Economics: A Mathematical Analysis, McGraw Hill.REFERENCES1. Dorfman, Solow and Samuelson, Linear programming and economic analysis, McGraw Hill2. Luigi Pasinetti, lectures in production theory, Macmillan3. Peter J. Hammond and Knut Sydsaeter (2002) Mathematics for Economic Analysis, Pearson.