



# MANIPAL UNIVERSITY JAIPUR

School of Arts and Law

Department of Economics

Course Hand-out

Mathematical Economics| EO 1303 | 4 Credits

Session: Jul- Dec 2016 | Faculty: Dr K.K. Gaur

**Course Outcomes:** At the end of the course, students will be able to

- [1303.1] Define and understand basic mathematical economic terms and concepts.
- [1303.2] Understand the linkages among the mathematical economic concepts.
- [1303.3] Apply the tools of analysis to predict the economic consequences of various events to fulfil the requirements of present day employers, who demand sound economic skills employability.
- [1303.4] Illustrate and interpret the economic outcomes of mathematical tools.
- [1303.5] Describe the importance of mathematics in economic research.

## A. SYLLABUS

**Application of Calculus:** Theory of consumer behavior, Maximization of utility, Derivation of demand curve, Income and leisure, Elasticity of demand; **Slutsky equation** (derivation of a commodity case and its elasticity form) consumer's surplus & Producer's surplus. **Theory of Firm-** A well behaved production function, Linearly Homogeneous Production Function, Elasticity of Substitution, CES production, Optimizing behavior of a firm, Derivation of cost and input demand functions from CD Production functions; **Linear Programming-** Graphical solution only; **Input-output Analysis:** (Static and Close Models), Hawkin-Simon Conditions of viability and determination of Gross output only; **Game Theory:** Two Person- zero -sum game, (saddle point only); **Cobweb Model**

## B. TEXT BOOKS

- Alpha C Chiang and Kevin Wainwright (2005), Fundamental Methods of Mathematical Economics, McGraw-Hill, 4th Edition.
- J.M.Handerson & R.E. Quandt, Micro Economic Theory: A Mathematical Approach, Mcgraw-Hills
- B.C. Mehta and G.M.K. Madnani (2008) Mathematics for Economists, S Chand and Sons.
- J.M. Henderson and R.E. Quandt (2000), Microeconomic Theory: A Mathematical Approach (Economic Handbook Series), McGraw-Hill College, 3rd Edition.
- Peter J Hammond (2002), Mathematics for Economic Analysis, Pearson Educational Asia.
- Srinath Barauh (2012), Basic Mathematics and its Application in Economics, Trinity Press Pvt Ltd.

