Arranged Syllabus - Version 1

Optimization Techniques in Game Theory

- Maximin-Minimax Principle
- Graphical method
- Dominance method

Optimization Techniques in Linear Programming

- Mathematical modelling
- Graphical method
- Simplex method
- Two-Phase method

Probability and Statistics

- Distributions
- Covariance
- Correlation
- Sampling
- Estimation in statistics
- Testing of hypothesis
- Bayesian Hypothesis

Stochastic Processes

- Stationary process
- Autocorrelation problems
- Power density technique
- Markov model
- Classification of chains
- Higher transition probabilities
- Limiting behaviour

Linear Algebra

- Orthonormal matrices

- Gram Schmidt orthonormalization process
- QR decomposition
- SVD

Graph Theory

- Walk
- Connectedness
- Minimum spanning trees
- Connected components
- Shortest Path method techniques

Advanced Numerical Methods

- Boundary value problem
- Finite difference method
- Finite element method