1st Semester	18MBA105	Decision Science	L-T-P 3-0-0	3 Credits	35 hrs

Objectives:
1. To lay an adequate theoretical foundation to study various applied fields in statistics and decision science.
2. To understand role of quantitative techniques in managerial decision making.
3. To understand applications of various quantitative techniques in managerial settings.

Module-I:
Statistical Methods:
Measures of central tendency and dispersion: Standard Deviation, Simple Correlation, calculation of correlation coefficient, probable error, Rank correlation. Regression: Linear regression, calculation of regression coefficients,

Module II:
Decision Sciences & role of quantitative techniques.

Linear Programming: Concept, Formulation & Graphical and Simplex Solution, **Assignment Models:** Concept, Flood's Technique / Hungarian Method, applications including restricted & multiple assignments.**Transportation Models:** Concept, Formulation, Problem types: Balanced, Unbalanced, Minimization, Maximization Basic initial solution using North West Corner, Least Cost & VAM, and Optimal Solution using MODI.

Module-III:

Queuing Theory : Concept, Single Server (M/M/I,), Markov Chains & Simulation Techniques: Markov chains: Applications related to management functional areas, **Decision Theory:** Concept, Decision under risk (EMV) & uncertainty, **Game Theory**: Concept, 2 zero sum game with dominance, Pure & Mixed Strategy.

Books:
- Quantitative Techniques for Management, Levine, Krehbiel, Berenson, Pearson
- Quantitative Techniques in Management by N.D. Vohra Tata, McGraw Hill
- Quantitative Techniques-Davis.B, Oxford
- Operations Research by R. Pannerselvam, Prentice Hall
- Statistics for Business and Economics; R P Hooda, Vikas
- Operations Research by Nita Shah, Ravi Gor, HardikSoni, PHI
- Business Statistics : J K Sharma, Vikas