**Introduction to Optimization Techniques**

* Linear Programming Problem (lpp)
* Mathematical Modelling
* Graphical Procedure

-Feasible Solution

-Infeasible Solution

-Unbounded Solution

* Simplex Method

-Basic Feasible Solutions

-Optimal Solution

* Artificial Variable Techniques

-Big M method

* Duality Theory

-Dual Simplex Method

* Sensitivity Analysis

-Changes in the cost coefficients

-Changes in the resource levels

* Transportation Problem

-Initial BFS

-Checking for Optimality (UV Method)

-Iteration towards Optimal Allotment (Modi Method)

* Assignment Problem

-Initial Assignment

-Iteration towards Optimal Assignment (Hungarian Method)

* Integer Programming Problem (ipp)

-Branch and Bound Method

* Non-Linear Programming Problem (nlpp)

-Lagrangian Multipliers

-Kuhm-Tucker Conditions

* Quadratic Programming Problem

Reference Books: 1. Operations Research by Hamdy A.Taha

2. Engineering Optimization: Theory and Practice by SS Rao.

Course Evaluation Plan: Test/Quiz/Assignment – 60%

Mid-Sem Exam - 15%

End-Sem Exam – 25%