Program

1. **Linear Programming (LP)**

1.1 Introduction
1.2 Formulation and Graphical Solution
1.3 Definitions and Properties
1.4 Solving Problems by Solver/Excel

2. Simplex Method

2.1 Introduction
2.2 Augmented Form and Basic Feasible Solutions
2.3 Simplex Algorithm

3. **Duality and Sensitivity Analysis**

3.1 Introduction
3.2 Duality
3.3 Economic Interpretation of Duality. Shadow Prices. Primal-Dual Relations
3.4 Sensitivity Analysis

- Changes in the Right-Hand Sides of the Constraints
- Changes in the Coefficients of the Objective Fuction

4. **Transportation and Assignment Problems**

4.1 Introduction
4.2 Transportation Problem
4.3 Assignment Problem

5. **Network Optimization**

5.1 Introduction
5.2 Minimum Cost Flow Problem
5.3 Shortest-Path Problem
5.4 Minimum Spanning Tree Problem

- Prim Algorithm

6. **Integer Linear Programming (ILP)**

6.1 Introduction
6.2 Integer Linear Programming Problems
6.3 Graphical and Solver/Excel Solution
6.4 Formulations with Binary Variables