

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Management - NOC:Introduction to Operations Research

Subject Co-ordinator - Prof. G. Srinivasan

Co-ordinating Institute - IIT - Madras

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Linear Programming Introduction and formulations - Product Mix problem and Notations
- Lecture 2 - Linear Programming Introduction and formulations - Manpower and Production planning formulations
- Lecture 3 - Linear Programming Introduction and formulations - Media selection problem and Bicycle problem
- Lecture 4 - Linear Programming Introduction and formulations - Caterer problem
- Lecture 5 - Linear Programming Introduction and formulations - Maximum flow and bin packing problems
- Lecture 6 - Graphical and Algebraic methods - Graphical method (maximization)
- Lecture 7 - Graphical and Algebraic methods - Graphical method (minimization)
- Lecture 8 - Graphical and Algebraic methods - Algebraic method (maximization)
- Lecture 9 - Graphical and Algebraic methods - Algebraic method (minimization)
- Lecture 10 - Graphical and Algebraic methods - Comparing graphical and algebraic methods
- Lecture 11 - Simplex Algorithm - Algebraic form of simplex algorithm
- Lecture 12 - Simplex Algorithm - Tabular form of simplex (maximization)
- Lecture 13 - Simplex Algorithm - Tabular form (minimization)
- Lecture 14 - Simplex Algorithm - Unboundedness
- Lecture 15 - Simplex Algorithm - Infeasibility
- Lecture 16 - Dual - Motivation to the dual
- Lecture 17 - Dual - Writing the dual for a general LP
- Lecture 18 - Dual - Writing the dual for a general LP (Continued...)
- Lecture 19 - Dual - Duality theorems
- Lecture 20 - Dual - Complimentary slackness theorem
- Lecture 21 - Primal dual relationships - Dual solution using complimentary slackness
- Lecture 22 - Primal dual relationships - Dual solution from simplex table; economic interpretation of dual
- Lecture 23 - Primal dual relationships - Economic Interpretation of the dual; Dual Simplex algorithm
- Lecture 24 - Primal dual relationships - Solving LPs with mixed type of constraints
- Lecture 25 - Primal dual relationships - Matrix method for LP problems
- Lecture 26 - Introducing the transportation problem
- Lecture 27 - North West corner Rule and minimum cost method
- Lecture 28 - Penalty cost method
- Lecture 29 - Stepping stone method and Modified Distribution method

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- Lecture 30 - MODI method; Dual of the transportation problem and the optimality of the MODI method
- Lecture 31 - Introducing the Assignment problem
- Lecture 32 - Solving the Assignment problem
- Lecture 33 - Hungarian algorithm; Alternate optimum
- Lecture 34 - Unequal number of rows and columns; Dual of the assignment problem
- Lecture 35 - Optimality of the Hungarian algorithm
- Lecture 36 - Setting up the problem and solving simple LP problems
- Lecture 37 - Unboundedness and infeasibility
- Lecture 38 - Solving other formulations
- Lecture 39 - Solving a transportation problem
- Lecture 40 - Solving an assignment problem