MA839 NON LINEAR PROGRAMMING 3-0-0-3

Objectives:

- To introduce basic concepts of non-linear programming.
- To demonstrate to the research scholars how to solve non-linear programming problems.

Contents:

Convex optimization problems, Karush Kuhn-Tucker conditions, Quadratic programming problems, Wolfe's method and its convergence, Separable programming, Separable convex programming, Linear approximations to separable programming problems, Geometric programming problems, Unconstrained polynomial optimization, Generalized polynomial optimization problem using arithmetic-geometric inequality, Dynamic programming, Greedy method to find shortest path, Backward and forward recursion algorithms, Dynamic programming approach to find shortest path, Search techniques.

TEXTBOOKS/ REFERENCES:

1. Bazaraa, M., Sherali, H. D. and Shetty, C. M., "Nonlinear Programming: Theory and Algorithms", Wiley-Interscience; 3rd Ed. (2006)
2. Himmelblau, D. M., "Applied Nonlinear Programming", McGraw-Hill (1972)
3. Taha H. A., "Operations Research: An Introduction", MacMillan Pub Co., NY, 9th Edition (Reprint) (2013).
4. Ravindran A, Phillips D. T., Solberg J. J., "Operations Research: Principles and Practice", John Wiley and Sons, NY, Second Edition (Reprint) (2012)