Module Code: MATH-412
Module Title: **Operations Research - I**
Module Rating: 3 Cr. Hours

Linear Programming
- Linear programming, formulations and graphical solution
- Simplex method
- M-Technique and two-phase technique
- Special cases

Duality and Sensitivity Analysis
- The dual problem, primal-dual relationships
- Dual simplex method
- Sensitivity and postoptimal analysis

Transportation Models
- North-West corner
- Least-Cost and Vogel's approximations methods
- The method of multipliers
- The assignment model
- The transhipment model
- Network minimization

Recommended Books
1. Hamdy A. Taha, *Operations Research - An Introduction*, (Macmillan Publishing Company Inc., New York, 1987)
2. B. E. Gillett, *Introduction to Operations Research*, (Tata McGraw Hill Publishing Company Ltd., New Delhi)
3. F. S. Hillier and G. J. Liebraman, *Operations Research*, (CBS Publishers and Distributors, New Delhi, 1974)
4. C. M. Harvey, *Operations Research*, (North Holland, New Delhi, 1979)

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