Department of Mathematics
Faculty of Sciences, Jamia Millia Islamia

Skill Enhancement Course in Mathematics (2024-25)
Course Structure and Syllabus

Semester	Code	Title of the Paper	Credits
I	24MATS101	Linear Programming	3

24MATS101   Linear Programming

Unit-I	Linear Programming Problem: Mathematical formulation, Graphical method, Basic feasible solutions, Introduction to the simplex method: Optimality criterion. Integer programming: Branch and Bound method.
Unit-II	Transportation Problem, Initial basic feasible solution using methods (North-West corner, Least Cost, Vogel's Approximation Method), Modified distribution method; Hungarian Method for Assignment Problems. Sequencing problem: m machines n jobs problem, Graphical method for sequence problem.
Unit-III	Elementary inventory models: EOQ model with or without shortages; Replacement models: Individual replacement problem, Group replacement problem;

Books Recommended

1. A. H. Taha: *Operations Research – An Introduction*. Prentice Hall, 2010.
2. J. K. Sharma: *Operations Research – Theory and Application*, Macmillian Pub., 2007.
3. Thie, R. Paul, & G. E. Keough*: An Introduction to Linear Programming and Game Theory*. (3rd ed.). Wiley India Pvt. Ltd.,2014.
4. G. Hadley: *Linear Programming*, Narosa Publishing House, 2002.