SUBJECT NO-IM31012, SUBJECT NAME- OPTIMISATION AND HEURISTIC METHODS

LTP- 3-0-0,CRD- 3

SYLLABUS :-

Prerequisites: IM21003 Operations Research-IGenetic Algorithm: Mechanism, Appraisal of GA performance, Data structure, Procedures, Operations and techniques in genetic search, Computer implementation, Applications.Neural Networks: Introduction, multi-layer networks, recurrent networks, learning paradigms.Data Envelopment Analysis (DEA): Definitions, Relative efficiency measurement, Solutions to the DEA Model, Dual DEA Model, DEA issues. Fuzzy optimization: Soft constraints, Approximate reasoning, Multi-criteria soft decision modelling, Interactive approach, Developing expert systems using fuzzy logic.Simulated Annealing: Metropolis algorithm, Heat Bath Algorithm, Fast simulated annealing, Very fast simulated annealing, Mean field annealing.Chaos: complexity and simplicity, evolution of possibilities, simple models of chaos, strange attractors, deterministic chaos, self-organization, synergistics.Evolutionary computing: hybrid intelligent system, evolutionary dynamics, evolutionary engineering and its application.Booksâ¢Goldberg D.E., Genetic Algorithms in Search Optimization and Machine Learning, Addison Wesley, Reading, MA, USA, 1989.â¢Stamatios V. Kartalopoulos, Understanding Neural Networks and Fuzzy Logic â Basic Concepts and Applications, Prentice Hall of India, New Delhi, 2002â¢Deb K., Multi-Objective Optimization Using Evolutionary Algorithms, Chichester, 2002. â¢Rajasekaran S. and G.A. Vijayalakshmi Pai, Neural Networks, Fuzzy Logic, and Genetic Algorithm â Synthesis and Applications, Prentice Hall of India, New Delhi, 2003â¢Ramanathan R. (2003), An Introduction to Data envelopment Analysis â A Tool for Performance Measurement, Sage Publications, New Delhi.