VIKASH INSTITUTE OF TECHNOLOGY, BA

LESSON PLAN

Semester:6th		**Year: 3rd**
Branch : ALL		**Sub: Optimization in Engineering** **Sub Code :**
Name of the Faculty:		**TULASI GOUD**
Designation :		**ASSISTANT PROFESSOR**
Department :		**BSH**
Session		**2024-25**
Recommended Books		**Text book**: **1 Operations Research, P.K.Gupta, D.S.Hira, S.Chand and Company Ltd, 2(** **2Operations Research, F.S.Hiller, G.J.Lieberman, Tata McGraw Hill, Eightl** **Reference Books**: **1Engineering Optimization, S S Rao, New Age International Pvt Ltd, 2003.** **2Optimization for Engineering Design, Kalyanmoy Deb, PHI Learning .**
Sl. No.	**Lecture No.**	**Topics to be covered**
		MODULE-1
1	Lecture-01	Idea of Engineering optimization problems.
2	Lecture-02	Classification of optimizationalgorithms.
3	Lecture-03	Modeling of problems and principle of modeling.
4	Lecture-04	Linear Programming:Formulation of LPP.
5	Lecture-05	Graphical solution.
6	Lecture-06	Simplex method.
7	Lecture-07	Big-M method.
8	Lecture-08	Revised simplex method.
		MODULE-2
9	Lecture-09	Duality theory and its application.
10	Lecture-10	Dual simplex method.
11	Lecture-11	Sensitivity analysis in linear programming
12	Lecture-12	Transportation problems:Finding an initial basic feasible solution by N
13	Lecture-13	Least Cost rule.
14	Lecture-14	Vogel’s approximation method

15	Lecture-15	Degeneracy.
16	Lecture-16	Optimalitytest.
17	Lecture-17	MODI method.
18	Lecture-18	Stepping stone method.
		MODULE-3
19	Lecture-19	Assignment problems:
20	Lecture-20	Hungarian method for solution of Assignment problems
21	Lecture-21	Integer Programming:
22	Lecture-22	Branch and Bound algorithm for solution of integer programming prob
23	Lecture-23	Non-linear programming: Introduction to non-linear programming
24	Lecture-24	Unconstraintoptimization: Fibonacci and Golden Section Search metho
25	Lecture-25	Constrained optimization with equality constraint
26	Lecture-26	Lagrange multiplier method.
27	Lecture-27	Projected gradient method.
		MODULE-4
28	Lecture-28	Constrained optimization with inequality constraint: Kuhn-Tucker cond
29	Lecture-29	Quadratic programming
30	Lecture-30	Queuing models: General characteristics
31	Lecture-31	Markovian queuing model
32	Lecture-32	M/M/1model,
33	Lecture-33	Limited queue capacity
34	Lecture-34	Multiple server,
35	Lecture-35	Finite sources,
36	Lecture-36	Queue discipline

Signature of Faculty Member

PRINCIPAL

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Signature of HOD