



GULBARGA UNIVERSITY
"Jnana Ganga", GULBARGA - 585 106, Karnataka, India
DEPARTMENT OF MATHEMATICS



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Grams: UNIGUL



OET. 3.1: OPERATIONS RESEARCH – II

Teaching: 4 hrs./week

Credits:04

Max. Marks: 80 Int. Assessment.20

Linear Programming: Artificial variables, Solution of Linear Programming Problems (LPP) by –Method of Penalty and Two-Phase simplex method. Duality in Linear Programming: concept of duality, properties, fundamental theorem of duality, Dual simplex method, sensitivity analysis. (15 Hours)

Theory of Games: Introduction, Two-Person Zero-Sum games, Maximin-Minimax principle, mixed strategies, graphical solution of $2 \times N$ and $M \times 2$ games, Dominance property, saddle point theorems. (15 Hours)

Queuing Theory : Introduction, Queue discipline, Service channels, Poisson process, distribution of Inter-arrival times and Service times, classification of queues, Poisson queues, M/M/1 queuing models. (15 Hours)

Simulation: Introduction, elements of simulation model, Event-Type simulation, Generation of random phenomena, Monte-Carlo technique, Generation of uniform and non-uniform random observations, steps in simulation, simulation languages. (15 Hours)

References:

1. Hamdy A. Taha Operations Research, Macmillan,(1989)
2. Kanti Swarup, P.K. Gupta and Mamohan, Operations Research, S. Chand & Sons, (1980)
3. S.Kalavathy, Operations Research, Vikas(2001)
4. S.D. Sharma, Operations Research.
5. G.Hadley, Linear Programming, Narosa Publishing House, New-Delhi,(1987).

BSR
28/6/12

OEP. 3.1: OPERATIONS RESEARCH – II

Practicals: 4 hrs./week
Max. Marks: 50(40+10)

Credit: 02

- Practical-1: Solution of LPP by two-phase Method
- Practical-2: Solution of LPP's by dual simplex method
- Practical -3: Sensitivity analysis
- Practical-4: Solution of Game Problems by Maxmin-Minimax Principle
- Practical-5: Solution of Game Problems by Dominance Property
- Practical-6: Classification of Queuing Systems in real life problems.
- Practical-7: Solution of Queuing Problems
- Practical-8: Solution of Problems on Event-Type Simulation and generation of random observations.