

BHARATHIAR UNIVERSITY::COIMBATORE-641 046

**B. Sc. MATHEMATICS/B.Sc MATHEMATICS WITH COMPUTER
APPLICATIONS(COLLEGES) DEGREE COURSE - CBCS PATTERN**

(For the students admitted from the academic year **2010-2011** and onwards)

Note :

Introducing theory paper as Skill Based Subject –IV Operations Research instead of Skill Based Subject –IV Operation Research - Project for B.Sc. Mathematics(Colleges) and B.Sc. Mathematics with Computer Applications(Colleges) degree programme for the candidates admitted from the academic year 2010-11

SKILL BASED SUBJECT----SEMESTER-VI

SUBJECT TITLE :OPERATIONS RESEARCH--PAPER -IV

SUBJECT DESCRIPTION:

This course enhances the students knowledge in sequencing the jobs to be carried out based on cost optimization; improve the power on replacement policies ; analyse the cases according to their categories and improves the programming techniques.

UNIT--I:

SEQUENCING PROBLEMS

Introduction-problem of sequencing - basic terms used in sequencing- processing n -jobs through 2 machines - processing n -jobs through k machines -- processing 2 jobs through k machines.

UNIT-II

REPLACEMENT PROBLEMS

Introduction - Replacement of equipment / assets that deteriorates gradually - replacement of equipment that fails suddenly and problems.

UNIT--III

NON-LINEAR PROGRAMMING METHODS:

Khun-tucker conditions with non-negative constraints- Quadratic programming- Wolf's modified simplex method.

UNIT--IV:

INFORMATION THEORY:

Introduction- A measure of Information-Axiomatic Approach to Information- Entropy-The expected information- Some properties of entropy function-Joint and conditional entropies.

UNIT -- V :

APPLICATIONS:

General solution of (mxn) rectangular games using simplex method - Reliability and system failure rates using replacement problems- some applications of dynamic programming problems.

REFERENCES :

1. Operations research ; Kandiswarup ; P. K. Gupta ; Man Mohan ; S.Chand &sons education publications ; New Delhi.
2. Operations research : P K Gupta ; D S Hira ; S. Chand and company ltd. Ram Nagar; New Delhi.
3. Operations research principles problems ; S Dharani venkata krishnan ;keerthi publishing house pvt. ltd.