BUSINESS MATHEMATICS
BUSINESS MATHEMATICS
[CORE COURSE]

Semester: II	Credits: 3	Subject Code: BC22003	Lectures: 48

Course Outcomes:

At the end of this course the learner will be able to,

- Demonstrate, determine and validate a given argument, and be able to construct mathematical proofs independently
- Identify, prepare, analyze and execute mathematical tools in their careers.
- Examine, analyze, formulate and solve linear systems/linear inequalities graphically/geometrically and algebraically (using matrices),
- Explain the value of mathematical implementation in daily lifeand associating mathematical ideas to model/evaluate real-world problems.
- Choose, develop, formulate and measure Linear Programming Models for shortest path, maximum flow, minimal spanning tree, critical path, minimum cost flow and transhipment problems.

Unit 1: Matrices	12

- Introduction, Operations on Matrices
- Properties of Matrices
- Multiplication, Transpose, Inverse of a Matrix,
- Numerical Problems

Unit 2: Determinants	12

- Introduction, Value, Minors and Cofactors
- Properties of Determinants
- Solution of a system of Linear Equations
- Numerical Problems

Unit 3: Linear Programming Problem	08

- Introduction, Formulation of an LPP, General Linear programming Problem
- Graphical Method of solution of LPP, Areas of Applications of LPP
- Numerical Problems

Unit 4: Transportation Problem	08

- Introduction, The Transportation type problems in Standard Linear Programming Form

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- A Set of Basic Feasible Solutions, Initial Basic Feasible Solution (a) North – West Corner Method (b)Matrix – Minima Method (c) Vogel's Approximation Method
- Variations in Transportation Problem
- Numerical Problems

Unit 5: Assignment Problem	08

- Assignment Problems, Mathematical Formulation of the Problem
- Solution of the Assignment Problem, Computational Procedure, Variations in Assignment Problems
- Numerical Problems

#12 hours for Library work, assignments, practical or field work

Recommended Text Books:

- Rayarikar A. V. and Dixit P. G., *Business Mathematics,* NiraliPrakashan, June 2019
- DikshitAmarnath,KainJitendra Kumar,*Business Mathematics*, Himalaya Publishers
- Bari,*Business Mathematics*, New Literature Publishing Company
- Sancheti D C, Kapoor V K, *Basic Mathematics*, Sultan Chand, New Delhi, 2010
- SahaSuranjan, *Basic Business Mathematics and Statistics*, New Central, Calcutta, 1994

Reference Books:

- ChitaleRanjeet,*Statistical and Quantitative Methods,*Nirali Prakashan,2009
- SharmaJ K,, *Operations Research, Theory and Applications,* Macmillan Publishers,2009
- TahaHamdy A,*Operations Research, An Introduction*, Pearson; 2004
- SharmaS.D,*Operations Research*, KedarNath Ram Nath& Co Publishers; 2003
- Chakravorty& Ghosh, *Linear Programming*, Mansi Press, 2003
- Mohindra J P, *ABC of Mathematics*, Modern Publication, 2005
- Rao A B, *Basic Mathematics*, Himalaya Mumbai, 2005
- ZameruddinQazi, Bhambri Vijay K, *Business Mathematics*, Vikas Publishing, New Delhi, 2009

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VC Nominee (SPPU)	Dr. Anil Khairnar,	*Bhairinas 23/07/20*	*Bhairinas 23/07/20*
Subject Expert (Outside SPPU)	Dr. Prashant P Malvadkar,	*23/07/20*	*23/07/20*
Subject Expert (Outside SPPU)	Dr. Avinash A Patil	*23/07/20*	*23/07/20*
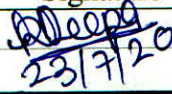
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Chairman (HoD)	Ms. Deepa Krishnamurthi,	*Deepa 23/7/20*

Industry Expert	Mr. Prakash Bade,		28/07/20		28/07/20
Faculty*	Mrs. Ritu Bhargava	Ritu Bhargava 23/07/20		Ritu Bhargava 23/07/20	
Faculty*	Mrs. Amrita Basu	AB. 23/07/20		AB 23/07/20	
Alumni	Ms. Srushti Moundekar				

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