KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)
Department Of Mathematics

Programme	Semester:	Title of The Course		Course Code:		W.E.F
B.Sc(DS)	I	MATHS FOR DATA SCIENCE		R20DSMAT101A		2022-23
Total No of Hours for Teaching – Learning		Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks	Credits
60 Hours		Theory	Practical	3 Hours	CIA	SEE	4+1
		4	2		40	60	

COURSE OBJECTIVES

The aim of this course is to provide necessary information to solve ordinary differential equations and their applications.

COURSE OUTCOMES

On Completion of this course the students will be able to:

- Knowledge of Determinants, Inverse of a matrices & Rank of matrices
- Knowledge of Cayley-Hamilton Theorem on problems of linear equations. To implement the concept of eigen values and vectors in engineering problems.
- To Know how to solve Homogeneous and Non-Homogeneous equations , Linear programming problems
- Know the concepts of limits ,continuity and their Applications
- Knowledge of Mean value theorems & their Applications.

UNIT – 1

Matrices and basic operation , Square matrix ,Determinates properties of Determinates ,singular and non – singular matrix , examples , inverse matrix ,rank of a matrix.

UNIT -2

Eigen values and Eigen vectors , Characteristics polynomial , cayley – Hamilton theorem , interpretation of eigen values and eigen vectors .

UNIT – 3

Linear systems , Definition , Solving Linear system , Homogeneous and Non-Homogeneous equations , Linear programming-simplex method , Graphical method .

UNIT – 4

Limits and Continuity , Real valued functions , Boundedness of a function , Limit of a function , some extension of the limits concept , Infinite limits , Limits at infinity . Continuous function – Continuity at a point , Combination of continuous function , Continuous function on intervals , uniform continuity .

UNIT – 5

Differentiation and Mean value theorem – The derivability of a function on interval , at a point , Derivability and Continuity of a function graphical meaning of the derivative , Mean value theorems – Rolle's theorem , Lagrange's theorem , Cauchy's mean value theorem .

REFERENCE BOOKS

1) Matrices by Shanti Narayana , published by S. Chand publications .
2) A Text book of B.Sc Mathematics by B.V.S.S. Sarma and others , Published by S . Chand and company Pvt. Ltd , New Delhi .

BLUE PRINT :

UNIT	SAQ	LAQ
I	2	2
II	2	2
III	2	2
IV	1	2
V	1	2

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Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
ALL II YEARS	III	ANALYTICAL SKILLS	R20LSC301	2021-22

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
30 Hours	Theory	Practical	2 Hours	CIA	SEE	2
	3	0		0	30	

Course Objective:
Intended to inculcate quantitative analytical skills and reasoning as an inherent abilityin students.

Course Outcomes:
After successful completion of this course, the student will be able to;
- Knowledge of basic concepts of arithmetic ability, quantitative ability, logical reasoning, business computations and data interpretation and obtain the associated skills.
- To know the acquire competency in the use of verbal reasoning.
- Identify and use appropriate technology to research , solve, and present solutions to problems.
- Knowledge of Solve problems pertaining to quantitative ability, logical reasoning and verbal ability inside and outside the campus.
- Formulate and articulate ideas

UNIT – 1: (10 Hours)
Arithmetic ability: Algebraic operations BODMAS, Fractions, Divisibility rules, LCM & GCD (HCF).

Verbal Reasoning: Number Series, Coding & Decoding, Blood relationship, Clocks, Calendars.

UNIT – 2: (10 Hours)
Quantitative aptitude: Averages, Ratio and proportion, Problems on ages, Time-distance – speed.

Business computations: Percentages, Profit & loss, Partnership, simple compound interest.

UNIT – 3: (07 Hours)
Data Interpretation: Tabulation, Bar Graphs, Pie Charts, line Graphs. Venn diagrams.

Recommended Co-Curricular Activities (03 hrs)
Surprise tests / Viva-Voice / Problem solving/Group discussion.

Text Book:
Quantitative Aptitude for Competitive Examination by R.S. Agrawal, S.Chand Publications.

Reference Books

Analytical skills by Showick Thorpe, published by S Chand And Company Limited, Ramnagar,New Delhi-110055

1. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
2. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw HillPublications.