KAKARAPARTIBHAVANARAYANACOLLEGE (Autonomous)
DepartmentOfMathematics

Prpgramme	Semester:	TitleofThe Course			CourseCode:		W.E.F
BCA	I	NUMERICALAND STATISTICALMETHODS			R20CMAT101A		2022-23
TotalNoofHoursfor Teaching–Learning		Instructional HoursforWeek		Duration of Semester End Examinationin Hours	MaxMarks		Credits
60 Hours		Theory	Practical	3 Hours	CIA	SEE	5
		4	2		40	60	

Course Objectives:

- Tolearnhowtoperformerroranalysis for arithmeticoperations.
- Todemonstrateworkingofvarious numericalmethods.
- Toprovideabasicunderstandingofthederivationanduseofmethods of interpolation and numerical integration.
- Toimpartknowledgeofvariousstatisticaltechniques.
- Todevelopstudentsunderstandingthroughlaboratoryactivitiesto solve problems related to above stated concepts.

Course Outcomes:

OnCompletionofthiscoursethe studentswillbeable to:

- Applyanappropriatenumericalmethodtosolvealgebraicor transcendental equations
- Knowhowto solvesystemoflinearequations,eigenvalues& eigen vectors of a square matrix.
- KnowledgeoftheconceptofInterpolation.
- Abilityto applyvariousstatisticaltechniquessuchasMeasures of Central Tendency and Dispersion. &Understanding of relationship betweenvariablesusingthe methodofCorrelation and Fit Analysis.
- Toknowtheconcept ofProbability&theirApplications.

Syllabus

UNIT 1: Solution of equations (polynomial and transcendental equations) interval having methods, secant, Regula – Falsi, Newton – Raphson methods, Fixed point Iteration method.

UNIT 2: Solutionofsystemoflinear equations: Gauss – Elimination method, Gauss – Jordan, Gauss – Siedel iteration method, LU- Decompositionmethod, Eigen values and Eigen vectors of a square matrix.

UNIT3: Interpolation:Forwardandbackwarddifferences, Newton's forward and backward formula, Lagrange's interpolation and Lagrange's inverse interpolation formula.

Numericaldifferentiation,integration:Numericaldifferentiationforwardand

backwardformula,TrapezoidalandSimpsons formulas.

Statistical Methods:

UNIT4: Basicconcepts anddefinition of statistics:Mean ,Median ,Mode ,standard deviation ,coefficientofvariation,skewnessandkurtosis,KarlPearsonCorrelation coefficient ,Rank Correlation and illustrated examples .

UNIT 5 : Probability : Basic concepts and definition of probability , Probability axioms , Conditional probability , Addition and Multiplication theorem of probability (Based on set theory concepts) , Bayes theorem , problems and applications .

TEXTBOOKS:

1. SunilS.PatilNumericalandStatisticalMethodsEBPB.
2. S.S.ShastryIntroductorymethodsofNumericalAnalysisPHI(NewDelhi).

REFERENCEBOOKS:

1. GuptaS.C &KapuramVKFundamentals ofMathematicalStatistics.
2. NumericalAnalysis,SultanChand&SonsNewDelhi.

BLUEPRINT:

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

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Class:	Semester:	TitleofThe Paper:	PaperCode:	W.E.F
ALL II YEARS	III	ANALYTICALSKILLS	R20LSC301	2021-22

TotalNoofHours for Teaching - Learning	InstructionalHours for Week		Duration of Semester End Examinationin Hours	MaxMarks		Credits
30 Hours	Theory	Practical	2 Hours	CIA	SEE	2
	3	0		0	30	

Course Objective:
Intendedto inculcatequantitativeanalyticalskillsandreasoningasaninherent abilityin students.

CourseOutcomes:

Aftersuccessfulcompletionofthiscourse,thestudentwillbeableto;

- Knowledgeofbasicconceptsofarithmeticability, quantitativeability, logical reasoning, businesscomputations and data interpretation and obtain the associated skills.
- Toknowtheacquire competencyintheuseofverbalreasoning.
- Identifyanduseappropriatetechnologytoresearch,solve,andpresent solutions to problems.
- KnowledgeofSolveproblemspertainingto quantitativeability, logical reasoning and verbal ability inside and outsidethe campus.
- Formulateandarticulateideas

UNIT –1:(10Hours)
Arithmeticability: AlgebraicoperationsBODMAS,Fractions,Divisibilityrules,LCM& GCD (HCF).

VerbalReasoning: NumberSeries,Coding&Decoding,Bloodrelationship,Clocks,Calendars.

UNIT –2:(10Hours)
Quantitativeaptitude: Averages,Ratioandproportion,Problemsonages,Time-distance– speed.

Businesscomputations: Percentages,Profit &loss,Partnership,simplecompoundinterest.

UNIT –3:(07Hours)
DataInterpretation: Tabulation,BarGraphs,PieCharts,lineGraphs.Venndiagrams.

RecommendedCo-CurricularActivities(03hrs)

Surprisetests/Viva-Voice/Problemsolving/Groupdiscussion.

TextBook:

QuantitativeAptitudeforCompetitiveExaminationbyR.S.Agrawal,S.ChandPublications.

Reference Books

AnalyticalskillsbyShowickThorpe,publishedbySChand AndCompanyLimited, Ramnagar,New Delhi-110055

1. QuantitativeAptitudeandReasoningbyRVPraveen,PHIpublishers.
2. QuantitativeAptitudeforCompetitiveExaminationbyAbhijitGuha,Tata Mc Graw HillPublication.