GOVERNMENT DEGREE COLLEGE,

YELLANDU

(Affiliated to Kakatiya University, Warangal)

Re-Accredited by NAAC with "B" Grade

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ANNUAL ACTION PLAN

DEPARTMENTOF MATHEMATICS

COMMISSIONERIATE OF COLLEGIATE EDUCATION-HYDERABAD-TS.
GOVERNMENT DEGREE COLLEGE YELLANDU BHADRADRI KOTHAGUDEM DT.
DEPARTMENT OF MATHEMATICS.
ANNUAL ACTION PLAN 2021-2022. (First Half)

Head of the Department: A. SRINIVASA RAO

SL. NO.	MONTH & YEAR	COURSE & CLASS	PAPER	UNIT	ACTIVITIES		
					CURRICULAR	CO CURRICULAR	EXTRA CURRICULAR
1	Jun-21	IIIBSc	DSC-E	Unit I	Vector Spaces: Vector Spaces and Subspaces		International Yoga Day Jun.21
		II BSc	DSC-1C	Unit I	Sequences: Limits of Sequences- A Discussion about Proofs-Limit Theorems for Sequences		
			BS-302 / SEC-2	Unit I	Descriptive and Relational Statistics: Data collection and tabulation, Graphical representation of data. Measures of central tendency (Mean, Median and Mode) with simple applications		
		I BSc	****	*****	**First Year Admissions**		
2	Jul-21	III BSc	DSC-E	Unit II	Null Spaces, Column Spaces, and Linear Transformations -Linearly Independent Sets: Bases -Coordinate Systems -The Dimension of a Vector Space	Student Seminar, & Slip Test	
		II BSc	DSC-1C	Unit I	Monotone Sequences and Cauchy Sequences - Subsequences-Lim sup's and Lim inf's-Series-Alternating Series and Integral Tests .		
			BS-302 / SEC-2	Unit I	Measures of dispersion (Range, Quartile Deviation, Mean Deviation, Standard Deviation, Standard error and Coefficient of variation) with simple applications, Concept of Skewness and Kurtosis.		
		I BSc	DSC-1A	Unit I	Partial Differentiation: Introduction - Functions of two variables - Neighbourhood of a point (a, b)		

3	Aug-21	III BSc	DSC-E	Unit II	Rank-Change of Basis - Eigenvalues and Eigenvectors - The Characteristic Equation	Student Seminar, Group Discussion & Slip Test	Independence Day.Aug.15. & National Sports Day.Aug.29
		II BSc	DSC-1C	Unit II	Continuity: Continuous Functions -Properties of Continuous Functions -Uniform Continuity - Limits of Functions		
			BS-302 / SEC-2	Unit I	Concept of correlation, computation of Karl-Pearson correlation coefficient, Spearman' s rank correlation coefficient and Simple linear regression with simple applications.		
		I BSc	DSC-1A	Unit I	Continuity of a Function of two variables, Continuity at a point - Limit of a Function of two variables - Partial Derivatives - Geometrical representation of a Function of two Variables - Homogeneous Functions.		
4	Sep-21	III BSc	DSC-E	Unit III	Diagonalization -Eigenvectors and Linear Transformations -Complex Eigenvalues - Applications to Differential Equations.	Assignment I, Internal Exam I & Quiz	Teacher's Day.Sep.5. Ozone Day.Sep.16. Swacha Bharat & Haritha Haram
		II BSc	DSC-1C	Unit III	Differentiation: Basic Properties of the Derivative - The Mean Value Theorem - • L'Hospital Rule - Taylor's Theorem.		
			BS-302 / SEC-2	Unit II	Probability and Inferential Statistics: Basic concepts and Basic terms of probability. Mathematical, Statistical and Axiomatic definitions of probability Conditional probability and independence of events. Addition and multiplication theorems (Statements only) with simple applications. Statements and applications of Binomial, Poisson and Normal distributions.		
		I BSc	DSC-1A	Unit II	Theorem on Total Differentials - Composite Functions - Differentiation of Composite Functions - Implicit Functions - Equality of fxy(a, b) and fyz(a, b) - Taylor's theorem for a function of two Variables - Maxima and Minima of functions of two variables – Lagrange's Method of undetermined multipliers		

5	Oct-21	III BSc	DSC-E	Unit IV	Orthogonality and Least Squares : Inner Product. Length, and Orthogonality	Slip Test. Student Seminar. Assignment II	Gandhi Jayanthi. Oct.2. Bhathukamma
		II BSc	DSC-1C	Unit IV	Integration : The Riemann Integral		
			BS-302 / SEC-2	Unit II	Concepts of Population, Sample, Parameter, Statistic, Null and Alternative hypotheses, Critical region, two types of errors, Level of significance.		
		I BSc	DSC-1A	Unit IV	Curvature and Evolutes: Introduction - Definition of Curvature - Radius of Curvature - Length of Arc as a Function, Derivative of arc - Radius of Curvature - Cartesian Equations - Newtonian Method - Centre of Curvature - Chord of Curvature.		
6	Nov-21	III BSc	DSC-E	Unit IV	Orthogonal Sets -Orthogonal Projections - The Gram-Schmidt Process.	Internal Exam II. Group Discussion	
		II BSc	DSC-1C	Unit IV	Properties of Riemann Integral-Fundamental Theorem of Calculus.		
		I BSc	DSC-1A	Unit III	Evolutes: Evolutes and Involutes - Properties of the evolute. Envelopes: One Parameter Family of Curves - Consider the family of straight lines - Definition - Determination of Envelope.		
		II BSc	BS-302 / SEC-2	Unit II	Tests of significance based on goodness of fit, means, variances using 2 test, t-test, F-test and analysis of variance (ANOVA).		
SEM END EXAMS							

DSC-E: Linear Algebra
DSC-1C: Real Analysis
DSC-1A: Differential and Integral Calculus
BS-302 / SEC-2: BIO STATISTICS

Signature of the Lecturer:

A. Srinivasa Rao

Head of the Department:A. SRINIVASA RAO

SL. NO.	MONTH & YEAR	COURSE & CLASS	PAPER	UNIT	ACTIVITIES		
					CURRICULAR	COCURRICULAR	EXTRA CURRICULAR
7	Dec-21	III BSc	DSC-1F/A	Unit I		Essay Writing, Quiz Competition, Elocution	National Mathematics Day
		II BSc	DSC-PAPER-ID	Unit I			
		1 BSc	DSC-PAPER-IA	Unit I	Lengths of Plane Curves: Introduction - Expression for the lengths of curves y = f(x) - Expressions for the length of arcs x = f(y); x = f(t), y = φ(t); r = f(θ) Volumes and Surfaces of Revolution: Introduction - Expression for the volume obtained by revolving about either axis - Expression for the volume obtained by revolving about any line - Area of the surface of the frustum of a cone - Expression for the surface of revolution - Pappus Theorems - Surface of revolution		
8	Jan-22	III BSc	DSC-1F/A	Unit I	Errors in Numerical Calculations - Solutions of Equations in One Variable: The Bisection Method - The Iteration Method - The Method of False Position-Newton's Method - Muller's Method - solution of Systems of Nonlinear Equations.	Student Seminar	Republic Day. Jan.26
		II BSc	DSC-1D	Unit I	Groups: Definition and Examples of Groups-Elementary Properties of Groups-Finite Groups -		

					Subgroups -Terminology and Notation - Subgroup Tests - Examples of Subgroups. Cyclic Groups: Properties of Cyclic Groups - Classification of Subgroups Cyclic Groups.		
		I BSc	DSC-PAPER-II	Unit I	Differential Equations of first order and first degree: Introduction - Equations in which Variables are Separable - Homogeneous Differential Equations - Differential Equations Reducible to Homogeneous Form - Linear Differential Equations - Differential Equations Reducible to Linear Form - Exact differential equations - Integrating Factors - Change in variables.		
9	Feb-22	III BSc	DSC-1F/A	Unit II	Interpolation and Polynomial Approximation: Interpolation - Finite Differences - Differences of Polynomials - Newton's formula for Interpolation - Gauss's central differences formulae - Stirling's and Bessel's formula - Lagrange's Interpolation Polynomial - Divided Differences - Newton's General Interpolation formula - Inverse Interpolation.	Group Discussion. Student Seminar	National Science Day Feb.28
		II BSc	DSC-1D	Unit II	Permutation Groups: Definition and Notation - Cycle Notation-Properties of Permutations -A Check Digit Scheme Based on D5. Isomorphisms ; Motivation- Definition and Examples -Cayley's Theorem Properties of Isomorphisms -Automorphisms-Cosets and Lagrange's Theorem Properties of Cosets 138 - Lagrange's Theorem and Consequences-An Application of Cosets to Permutation Groups - The Rotation Group of a Cube and a Soccer Ball		
		I BSc	DSC-PAPER-II	Unit II	Total Differential Equations - Simultaneous Total Differential Equations - Equations of the form dx P = dy Q = dz R. UNIT 3: Differential Equations first order but not of first degree: Equations Solvable for p - Equations Solvable		

					for y - Equations Solvable for x - Equations that do not contain x (or y)- Equations Homogeneous in x and y - Equations of the First Degree in x and y - Clairaut's equation.		
10	Mar-22	III BSc	DSC-1F/A	Unit III	Curve Fitting: Least Square Curve Fitting: Fitting a Straight Line-Nonlinear Curve Fitting. Numerical Differentiation and Integration: Numerical Differentiation - Numerical Integration: Trapezoidal Rule-Simpson's 1/3rd-Rule and Simpson's 3/8th-Rule - Boole's and Weddle's Rule - Newton's Cotes Integration Formulae.	Internal Exam I, Assignment I & Quiz	International Women's Day. Mar.8
		II BSc	DSC-PAPER-IV	Unit III	Permutation Groups: Definition and Notation - Cycle Notation-Properties of Permutations -A Check Digit Scheme Based on D5. Isomorphisms : Motivation- Definition and Examples -Cayley's Theorem Properties of Isomorphisms -Automorphisms-Cosets and Lagrange's Theorem Properties of Cosets 138 - Lagrange's Theorem and Consequences-An Application of Cosets to Permutation Groups - The Rotation Group of a Cube and a Soccer Ball		
		I BSc	DSC-PAPER-II	Unit III	Applications of First Order Differential Equations : Growth and Decay - Dynamics of Tumour Growth - Radioactivity and Carbon Dating - Compound Interest - Orthogonal Trajectories Unit- III Higher order Linear Differential Equations: Solution of homogeneous linear differential equations with constant coefficients - Solution of non-homogeneous differential equations P(D)y = Q(x) with constant coefficients by means of polynomial operators when Q(x) = be ax, b sin ax/b cos ax, bxk , V e ax		
11	Apr-22	III BSc	DSC-1F/A	Unit IV	Numerical Solutions of Ordinary Differential	Slip Test & Student	Earth Day.Apr.22

					Equations: Taylor's Series Method - Picard's Method - Euler's Methods - Runge Kutta Methods.	Seminar, Assignment II.	
		II BSc	DSC-1D	Unit IV	Ideals and Factor Rings: Ideals -Factor Rings - Prime Ideals and Maximal Ideals. Ring Homomorphisms: Definition and Examples- Properties of Ring- Homomorphisms.		
		I BSc	DSC-1B	Unit IV	Method of undetermined coefficients. Unit- IV Method of variation of parameters - Linear differential equations with non constant coefficients - The Cauchy - Euler Equation - Legendre's Linear Equations - Miscellaneous Differential Equations.		
12	May-22	III BSc	DSC-1F/A	Unit IV	Runge Kutta Method.	Internal Exam II, Student Seminar	
		II BSc	DSC-1D	Unit IV	Ring Homomorphisms		
		I BSc	DSC-1B	Unit IV	Partial Differential Equations: Formation and solution- Equations easily integrable - Linear equations of first order.		
SEM END EXAMS							

DSC-1F/A: Numerical Analysis

DSC-1D: Algebra

DSC-1B: Differential Equations

Signature of the Lecturer: A. Srinivasa Rao

P. padma

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Yellandu-[illegible] Kothagudem Dist.