



**SRI Y.N.COLLEGE(Autonomous),Narasapur**  
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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021-22**  
**I B.Sc Paper-I, - Differential equations - Semester –I**  
**(Sri Ch Bala Raju, Ch Venkatesh Gowd, P Bhagya Sri, ASL Bhavani)**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Nov	I <sup>st</sup> week	Bridge course: Fundamentals in Intermediate	Basics Useful formulas	Teaching	12	Assignment	1
		IV <sup>th</sup> week	Exact Differential Equations					
2.	Dec	I <sup>st</sup> week	Integrating factors	Additional Problems Downloaded Material	Teaching	24	Assignment Prof.Srinivasa Ramanujan birthday Celebrations	1
		II <sup>nd</sup> week	Integrating factors					
		III <sup>rd</sup> week	Linear Differential Equations					
		IV <sup>th</sup> week	Bernoulli's Differential Equations					
3.	Jan	I <sup>st</sup> week	Orthogonal trajectories	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		II <sup>nd</sup> week	Differential equations solvable for p,y					
		III <sup>rd</sup> week	Differential equations solvable for y,x					
		IV <sup>th</sup> week	Differential equations of the first degree in x and y, Clairaut's equation					
4.	Feb	I <sup>st</sup> week	General Solution of $f(D)y=0$ and $f(D)y=Q$ ,	Difficult Examples Downloaded Material	Teaching	24	Slip test Assignments Guest lecture	1 1 1
		II <sup>nd</sup> week	P.I of $f(D)y=Q$ when $Q=be^{ax}$ and $\sin bx$ or $\cos bx$					
		III <sup>rd</sup> week	P.I of $f(D)y=Q$ when $Q=bx^k$ and $e^{ax}V$					
		IV <sup>th</sup> week	P.I of $f(D)y=Q$ when $Q=xV$ and $x^mV$					
5.	Mar	I <sup>st</sup> week	By inspection	Counter Examples Downloaded Material	Teaching	24	Slip test Assignments	1 1
		II <sup>nd</sup> week	Method of variation of parameters					
		III <sup>rd</sup> week	Cauchy Euler Equation, Legendre's equation					
		IV <sup>th</sup> week	Revision					



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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021-22**

**I B.Sc Paper-II - Solid Geometry - Semester –II**

**(Dr GSVS Sai baba, Ch Bala Raju, , Ch Venkatesh Gowd, P Bhagya Sri, A S L Bhavani)**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	May	I <sup>st</sup> week	Introduction	Basics	Teaching	18	Assignment	1
		II <sup>nd</sup> week	The Plane					
		III <sup>rd</sup> week	The Plane					
2.	June	I <sup>st</sup> week	The Plane	Examples Downloaded Materials	Teaching	18	Slip test Assignments Quiz Seminars	1 1 1 1
		II <sup>nd</sup> week	The Straight Line					
		III <sup>rd</sup> week	The Straight Line					
3.	July	I <sup>st</sup> week	The Straight Line	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		II <sup>nd</sup> week	The Sphere					
		III <sup>rd</sup> week	The Sphere					
		IV <sup>th</sup> week	The Sphere					
4	Aug	I <sup>st</sup> week	The Sphere	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		II <sup>nd</sup> week	The Cone					
		III <sup>rd</sup> week	The Cone					
		IV <sup>th</sup> week	The Cone					



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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021 – 22**  
**II B.Sc Paper-III - Group Theory - Semester –III**  
**( Dr GSVS Saibaba, PK Parameswari, S Kusuma, Ch Venkatesh Gowd, P Bhagya Sri, ASL Bhavani)**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Dec	III <sup>rd</sup> week	Number system, Binary Operations	Useful results	Teaching	12	Assignment Prof.Srinivasa Ramanujan birthday Celebrations	1
		IV <sup>th</sup> week	Functions , Groups, properties					
2.	Jan	I <sup>st</sup> week	Finite and Infinite groups-examples	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		II <sup>nd</sup> week	Order of a group					
		III <sup>rd</sup> week	Composition tables with examples					
		IV <sup>th</sup> week	Sub Groups					
3.	Feb	I <sup>st</sup> week	Cosets and Lagrange's theorem	Difficult Examples Down Loaded Material	Teaching	24	Slip test Assignments Guest lecture	1 1 1
		II <sup>nd</sup> week	Normal Subgroups, Quotient groups					
		III <sup>rd</sup> week	Homomorphism & Isomorphism of groups					
		IV <sup>th</sup> week	Permutation of groups					
4.	Mar	I <sup>st</sup> week	Cyclic groups	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		II <sup>nd</sup> week	Def of Ring and Basic Properties					
		III <sup>rd</sup> week	Boolean rings , Integral Domain,					
		IV <sup>th</sup> week	Sub Rings, Ideals					



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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 201-22**

**II B.Sc Paper-IV - Real Analysis - Semester –IV**

**(Dr GSVS Saibaba, S Kusuma, Ch Venkatesh Gowd, P Bhagya Sri, ASL Bhavani, )**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	May	I <sup>st</sup> week	Real Numbers	Downloaded Material Additional Problems	Teaching	18	Slip test Assignments Seminars	1
		II <sup>nd</sup> week	Sequences					1
		III <sup>rd</sup> week	Sequences					2
2.	June	I <sup>st</sup> week	Infinite Series	Examples Downloaded Materials	Teaching	18	Slip test Assignments Quiz	1
		II <sup>nd</sup> week	Infinite Series					1
		III <sup>rd</sup> week	Infinite Series					1
3.	July	I <sup>st</sup> week	Limits	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1
		II <sup>nd</sup> week	Continuous functions					1
		III <sup>rd</sup> week	Continuous functions					
		IV <sup>th</sup> week	Differentiation					
4.	Aug	I <sup>st</sup> week	Mean value theorems	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1
		II <sup>nd</sup> week	Generalized mean value theorems					1
		III <sup>rd</sup> week	Riemann Integration					
		IV <sup>th</sup> week	Riemann Integration					



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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021 - 22**  
**III B.Sc Paper-V - Linear Algebra - Semester –IV**  
**( PK Parameswari, Ch Bala Raju, P Bhagya Sri, S Kusuma)**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Sep	I <sup>st</sup> Week	Vector spaces, properties	Downloaded material Additional Problems	Teaching	10	Assignments	1
		II <sup>nd</sup> Week	Vector spaces, properties					
2	Oct	I <sup>st</sup> week	Sub spaces, characterization of Subspaces	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments Quiz	1
		II <sup>nd</sup> week	Linear combination, Linearly independent and Dependent of vectors					1
		III <sup>rd</sup> week	Linear combination, Linearly independent and Dependent of vectors					1
		IV <sup>th</sup> week	Direct sum of two Subspaces of vector space					
3	Nov	I <sup>st</sup> week	Basis and dimension Vector space, Theorems on finite dimensional	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1
		II <sup>nd</sup> week	Quotient space, Dimension of Quotient space.					1
		III <sup>rd</sup> week	Linear transformation					
		IV <sup>th</sup> week	Rank and nullity of Linear transformation Linear transformation					
4	Dec	I <sup>st</sup> week	Matrix	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments Prof.Srinivasa Ramanujan birthday Celebrations	1
		II <sup>nd</sup> week	Matrix					1
		III <sup>rd</sup> week	Matrix					
		IV <sup>th</sup> week	Inner product spaces, Norm of a vector space					
5	Jan	I <sup>st</sup> week	The Gram-Schmidt orthogonalisation process,	Additional	Teaching	12	Slip test	1



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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021-22**

**III B.Sc Paper-V - Ring Theory & Vector Calculus - Semester –V**

( Ch Bala Raju, S Kusuma, Ch Venkatesh Gowd, P Bhagya Sri, ASL Bhavani, P Venkata Rao )

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Sep	I <sup>st</sup> Week	Def of Ring and Basic Properties	Downloaded material Additional Problems	Teaching	12	Assignments	1
		II <sup>nd</sup> Week	Boolean rings, Divisors of Zero and Cancellation of laws,					
2	Oct	I <sup>st</sup> week	Integral Domain, Division Ring and Fields	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments Quiz	1
		II <sup>nd</sup> week	Sub Rings					1
		III <sup>rd</sup> week	Ideals					1
		IV <sup>th</sup> week	Homomorphism, Properties of Homomorphism					
3	Nov	I <sup>st</sup> week	Maximal and Prime ideals	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1
		II <sup>nd</sup> week	Vector differentiation, ordinary derivatives of vectors					1
		III <sup>rd</sup> week	Space curves, continuity, differentiation					
		IV <sup>th</sup> week	Gradient, divergence					
4	Dec	I <sup>st</sup> week	Curl operators, formulae involving these operators.	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments Project works Prof.Srinivasa Ramanujan birthday Celebrations	1
		II <sup>nd</sup> week	Curl operators, formulae involving these operators.					1
		III <sup>rd</sup> week	Vector integration					
		IV <sup>th</sup> week	Vector integration					
5	Jan	I <sup>st</sup> week	Vector integration	Additional Problems Downloaded Material	Teaching	12	Slip test Assignments Project works	1
		II <sup>nd</sup> week	Vector integration					1



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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021 - 22**  
**III B.Sc Paper-VI - Linear Algebra - Semester –V**  
**( Ch Bala Raju, PK Parameswari, Ch Venkatesh Gowd, P Bhagya Sri )**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Sep	I <sup>st</sup> Week	Vector spaces, properties	Downloaded material Additional Problems	Teaching	10	Assignments	1
		II <sup>nd</sup> Week	Vector spaces, properties					
2	Oct	I <sup>st</sup> week	Sub spaces, characterization of Subspaces	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments Quiz	1 1 1
		II <sup>nd</sup> week	Linear combination, Linearly independent and Dependent of vectors					
		III <sup>rd</sup> week	Linear combination, Linearly independent and Dependent of vectors					
		IV <sup>th</sup> week	Direct sum of two Subspaces of vector space					
3	Nov	I <sup>st</sup> week	Basis and dimension Vector space, Theorems on finite dimensional	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		II <sup>nd</sup> week	Quotient space, Dimension of Quotient space.					
		III <sup>rd</sup> week	Linear transformation					
		IV <sup>th</sup> week	Rank and nullity of Linear transformation Linear transformation					
4	Dec	I <sup>st</sup> week	Matrix	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments Prof.Srinivasa Ramanujan birthday Celebrations	1 1
		II <sup>nd</sup> week	Matrix					
		III <sup>rd</sup> week	Matrix					
		IV <sup>th</sup> week	Inner product spaces, Norm of a vector space					
5	Jan	I <sup>st</sup> week	The Gram-Schmidt orthogonalisation process,	Additional Problems Downloaded Material	Teaching	12	Slip test Assignments Project works	1 1
		II <sup>nd</sup> week	Orthogonal complements					



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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021-22**

**III B.Sc Paper-VII - Numerical Analysis - Semester –VI**

**( Ch Bala Raju, PK Parameswari, S Kusuma, Ch Venkatesh Gowd)**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Feb	III <sup>rd</sup> week	Errors in Numerical computation, Numbers and their accuracy, errors and their computation	Useful results	Teaching	12	Assignment	1
		IV <sup>th</sup> week	Absolute, relative, percentage errors, a general error formulae, error in a series approximation					
2.	March	I <sup>st</sup> week	Solution of algebraic and transcendental equation, The Bisection method	Additional Problems Downloaded Material	Teaching	24	Slip test	1
		II <sup>nd</sup> week	Iterative method, the method of Regula -Falsi					
		III <sup>rd</sup> week	Newton-Raphson method, Muller's method.					
		IV <sup>th</sup> week	Interpolation, Errors in polynomial interpolation					
3.	April	I <sup>st</sup> week	Newton forward difference formula, Backward difference formula	Difficult Examples	Teaching	24	Slip test Guest Lecture	1 1
		II <sup>nd</sup> week	Newton forward difference formula, Backward difference formula					
		III <sup>rd</sup> week	Central difference formula, Gauss forward and backward formulae					
		IV <sup>th</sup> week	Strilling's formula, Problems on finite differences					
4	May	I <sup>st</sup> week	Divided differences, Newton divided difference formula	Difficult Examples	Teaching	18	Slip test Guest Lecture	1 1
		II <sup>nd</sup> week	Lagrange's interpolation formula					
		III <sup>rd</sup> week	Error's in Lagranges formulae,					





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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021-22**

**III B.Sc Paper-VIII A - Advanced Numerical Analysis - Semester –VI**

**( PK Parameswari )**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Feb	III <sup>rd</sup> week	Curve fitting: Least square methods, fitting a Straight line non linear curve fitting	Additional Problems	Teaching	12	Assignments	1
		IV <sup>th</sup> week	Curve fitting by sum of exponentials					
2.	March	I <sup>st</sup> week	Numerical differentiation and Numerical Integration	Additional Problems Downloaded Material	Teaching	24	Assignments	2 1
		II <sup>nd</sup> week	Numerical differentiation and Numerical Integration					
		III <sup>rd</sup> week	Errors in numerical differentiation					
		IV <sup>th</sup> week	Max and min values of tabulated functions Simpson's $\frac{1}{3}$ <sup>rd</sup> rule and $\frac{3}{8}$ <sup>th</sup> rules					
3.	April	I <sup>st</sup> week	Trapezoidal rule, Weddle's rule, Boole's rule.	Additional Problems Downloaded Material	Teaching	24	Slip test Assignment	1 1
		II <sup>nd</sup> week	Linear system of equations, solution of linear System					
		III <sup>rd</sup> week	Direct methods, matrix inversion method					
		IV <sup>th</sup> week	Gaussian elimination method, method of Factorization, III-conditioned linear system					
4	May	I <sup>st</sup> week	Iterative method, Jacobi's method, Gauss-seidal method.	Additional Problems Downloaded Material	Teaching	18	Slip test Assignment	1 1
		II <sup>nd</sup> week	Differential equations in numerical analysis, Taylor's series, Euler's, Modified Euler's					
		III <sup>rd</sup> week	Picard's method , Runge-Kutta methods					



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**DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2021-22**  
**III B.Sc Paper-VIII B - Special Functions - Semester –VI**  
**( Ch Venkatesh Gowd)**

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Feb	III <sup>rd</sup> week	Hermite Differential Equation, Solution of Hermite Equation, Generating function	Additional Problems	Teaching	12	Assignments	1
		IV <sup>th</sup> week	Other forms of Hermite Polynomial, First few Hermite Polynomials					
2.	March	I <sup>st</sup> week	Orthogonal properties and Recurrence formulae for Hermite Polynomials	Additional Problems Downloaded Material	Teaching	24	Assignments	2 1
		II <sup>nd</sup> week	Laguerre's Differential Equation, Solution of Laguerre's Polynomials					
		III <sup>rd</sup> week	First few Laguerre Polynomials, Orthogonal property of the Laguerre Polynomials, Recurrence formulae					
		IV <sup>th</sup> week	Definition, Solution of Legendre's equation, Definition of $P_n(x)$ & $Q_n(x)$ , General sol of Legendre's eqn					
3.	April	I <sup>st</sup> week	$P_n(x)$ is the coefficient of $h^n$ . Orthogonal properties of Legendre's eqn, Recurrence formulae,	Additional Problems Downloaded Material	Teaching	24	Slip test Assignment	1 1
		II <sup>nd</sup> week	Rodrigue's formula, Def, solution of Bessel's general Differential equation					
		III <sup>rd</sup> week	General Solution of Bessel's equation, Integration of Bessel's equation in series for $n=0$					
		IV <sup>th</sup> week	Definition of $J_n(x)$ , Recurrence formulae for $J_n(x)$ , Generating function for $J_n(x)$					
4	May	I <sup>st</sup> week	Euler's Integrals- Beta and Gamma functions, Elementary properties of functions, Transformation of Gamma functions	Additional Problems Downloaded Material	Teaching	18	Slip test Assignment	1 1
		II <sup>nd</sup> week	Another form of Beta function, Relation between Beta and Gamma Functions					
		III <sup>rd</sup> week	Other Transformation					