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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20
I B.Sc Paper-I, Semester -I
(Differential equations)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	June	Istweek	Bridge course: Fundamentals in Intermediate	Basics Useful formulas	Teaching	08	Assignment	1
		IIndweek	Exact Differential Equations					
2.	July	Istweek	Integrating factors	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		IIndweek	Linear Differential Equations					
		IIIrdweek	Bernoulli's Differential Equations					
		IVthweek	Orthogonal trajectories					
3.	Aug	Istweek	Differential equations solvable for p,y	Difficult Examples Downloaded Material	Teaching	24	Slip test Assignments Guest lecture	1 1 1
		IIndweek	Differential equations solvable for y,x					
		IIIrdweek	Differential equations of the first degree in x and y, Clairaut's equation					
		IVthweek	General Solution of f(D)y=0 and f(D)y=Q, when Q is a function of x					
4.	Sep	Istweek	P.I of f(D)y=Q when Q=be^{ax} and sinbx or cosbx	Counter Examples Downloaded Material	Teaching	24	Slip test Assignments	1 1
		IIndweek	P.I of f(D)y=Q when Q=bx^{k} and e^{ax}V					
		IIIrdweek	P.I of f(D)y=Q when Q=xV and x^{m}V					
		IVthweek	Method of variation of parameters					
5.	Oct	Istweek	Cauchy Euler Equation	Additional Problems	Teaching	10	Slip test	1
		IIndweek	Revision				Assignments	1

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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20
I B.Sc Paper-II, Semester –II
(Solid Geometry)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Nov	IIIrdweek	Introduction to coordinate axes		Teaching	10	Assignment	1
		IVthweek	The Plane					
2.	Dec	Istweek	The plane	Examples Downloaded Materials	Teaching	24	Slip test Assignments Quiz Seminars Prof.Srinivasa Ramanujan birthday Celebrations	1 1 1 1
		IIndweek	The plane					
		IIIrdweek	The Straight Line					
		IVthweek	The Straight Line					
3.	Jan	Istweek	The Straight Line	Additional Problems Downloaded Material	Teaching	14	Slip test Assignments	1 1
		IIndweek	The Sphere					
		IIIrdweek	The Sphere					
		IVthweek	The Sphere					
4.	Feb	Istweek	The Sphere	Difficult Examples	Teaching	24	Slip test Assignments	1 1
		IIndweek	The Cone					
		IIIrdweek	The Cone					
		IVthweek	The Cone					
5.	March	Istweek	Revision	Counter Examples	Teaching	06	Slip test Assignments	1 1

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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20
II B.Sc Paper-III, Semester –III
(Group Theory)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	June	Istweek	Number system, Binary Operations	Useful results	Teaching	10	Assignment	1
		IIndweek	Groups, properties					
2.	July	Istweek	Finite and Infinite groups-examples	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		IIndweek	Order of a group					
		IIIrdweek	Composition tables with examples					
		IVthweek	Sub Groups					
3.	Aug	Istweek	Sub Groups ,Cosets and Lagrange's theorem	Difficult Examples Down Loaded Material	Teaching	24	Slip test Assignments Guest lecture	1 1 1
		IIndweek	Normal Subgroups					
		IIIrdweek	Normal subgroups					
		IVthweek	Quotient groups					
4.	Sep	Istweek	Homomorphism of groups	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		IIndweek	Isomorphism of groups					
		IIIrdweek	Permutation of groups					
		IVthweek	Permutation of groups, Cyclic groups					
5.	Oct	Istweek	Cyclic groups	Additional Problems Downloaded Material	Teaching	10	Slip test Assignments	1 1
		IIndweek	Revision					

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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20
II B.Sc Paper-IV, Semester –IV
(Real Analysis)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Nov	IstWeek	Real Numbers	Downloaded Material Additional Problems	Teaching	10	Slip test Assignments Seminars	1 1 2
		IIndWeek	Real Sequences					
2.	Dec	Istweek	Real Sequences	Examples Downloaded Materials	Teaching	32	Slip test Assignments Quiz Prof.Srinivasa Ramanujan birthday Celebrations	1 1 1
		IIndweek	Infinite Series					
		IIIrdweek	Infinite Series					
		IVthweek	Limits					
3.	Jan	Istweek	Continuous functions	Additional Problems Downloaded Material	Teaching	32	Slip test Assignments	1 1
		IIndweek	Continuous functions					
		IIIrdweek	Differentiation					
		IVthweek	Mean value theorems					
4.	Feb	Istweek	Mean value theorems	Difficult Examples	Teaching	32	Slip test Assignments	1 1
		IIndweek	Generalized mean value theorems					
		IIIrdweek	Riemann Integration					
		IVthweek	Riemann Integration					
5.	March	Istweek	Revision	Downloaded Material Additional Problems	Teaching	10	Slip test Assignments	1 1

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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20
III B.Sc Paper-V, Semester –V
(Ring Theory & Vector Calculus)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Jun	IstWeek	Def of Ring and Basic Properties	Downloaded material Additional Problems	Teaching	10	Assignments	1
		IIndWeek	Boolean rings, Divisors of Zero and Cancellation of laws,					
2.	Jul	Istweek	Integral Domain, Division Ring and Fields	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments Quiz Prof.Srinivasa Ramanujan birthday Celebrations	1 1 1
		IIndweek	Sub Rings, Ideals					
		IIIrdweek	Homomorphism, Properties of Homomorphism					
		IVthweek	Maximal and Prime ideals					
3.	Aug	Istweek	Vector differentiation, ordinary derivatives of vectors	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments	1 1
		IIndweek	Space curves, continuity, differentiation					
		IIIrdweek	Gradient, divergence					
		IVthweek	curl operators, formulae involving these operators.					
4.	Sep	Istweek	Vector integration: Theorem on Gauss & problems	Additional Problems Downloaded Material	Teaching	24	Slip test Assignments Project works	1 1
		IIndweek	Green's theorem and problems					
		IIIrdweek	Stocke's theorem and problems					
		IVthweek	Applications of Gauss, Green's and Stocke's theorems					
5.	Oct	Istweek	Applicaitons on Gauss, Green's and Stocke's theorems	Counter Examples	Teaching	06	Slip test Assignments	1 1
		II week	Revision					

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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20

III B.Sc Paper-VI, Semester –V

(Linear Algebra)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	June	Istweek	Vector spaces, properties	Useful results	Teaching	10	Assignments	1
		IIndweek	Sub spaces, characterization of Subspaces					
2.	July	Istweek	Linear combination, Linearly independent and Dependent of vectors	Additional Problems Downloaded Material	Teaching	24	Slip test	1
		IIndweek	Direct sum of two Subspaces of vector space					
		IIIrdweek	Basis and dimension Vector space, Theorems on finite dimensional					
		IVthweek	Quotient space, Dimension of Quotient space.					
3.	Aug	Istweek	Inner product spaces, Norm	Difficult Examples Down Loaded Material	Teaching	24	Slip test	1
		IIndweek	The Gram-Schmidt orthogonalisation process,				Assignments	1
		IIIrdweek	Orthogonal complements				Guest Lecture	1
		IVthweek	Adjoint operators					
4.	Sep	Istweek	Linear transformation	Additional Problems Downloaded Material	Teaching	24	Slip test	1
		IIndweek	Rank and nullity of Linear transformation				Assignments	1
		IIIrdweek	Isomorphism, Null space, Dimensions, problems					
		IVthweek	Matrices, Elementary matrix operations					
5.	Oct	Istweek	Sylvester's law of nullity, Characteristic values and vectors	Additional Problems Downloaded Material	Teaching	1	Slip test	1
							Assignments	1
		IIndweek	System of linear equations, Determinants, Diagnolisation					

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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20
III B.Sc Paper-VIIB, Semester –VI
(Numerical Analysis)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity Activity	Curricular Activity Hours Alloted	Co-Curricular Activity Activity	Co-Curricular Activity Hours Alloted
1.	Nov	Istweek	Errors in Numerical computation, Numbers and their accuracy, errors and their computation	Useful results	Teaching	10	Assignment	1
		IIndweek	Absolute, relative, percentage errors, a general error formulae, error in a series approximation					
2.	Dec	Istweek	Solution of algebraic and transcendental equation, The Bisection method	Additional Problems Downloaded Material	Teaching	24	Slip test	1
		IIndweek	Iterative method, the method of Regula -Falsi,					
		IIIrdweek	Newton-Raphson method, Generalized Newton-Raphson method					
		IVthweek	Ramanujan's method, Muller's method.					
3.	Jan	Istweek	Interpolation, Errors in polynomial interpolation	Difficult Examples	Teaching	24	Slip test	1
		IIndweek	Newton forward difference formula, Backward difference formula				Guest Lecture	1
		IIIrdweek	Central difference formula, Gauss forward and backward formulae's					
		IVthweek	Strilling's formula, Problems on finite differences					
4.	Feb	Istweek	Divided differences	Additional Problems	Teaching	24	Slip test	1
		IIndweek	Newton divided difference formula					
		IIIrdweek	Lagrange's interpolation formula					
		IVthweek	Lagrange's interpolation formula					
5.	Mar	Istweek	Error's in Lagranges formulae, Derivation of Governing equations	Additional Problems	Teaching	6	Slip test	1

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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20
III B.Sc Paper-VIIIB-1, Semester –VI
(Advanced Numerical Analysis)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity Activity	Curricular Activity Hours Alloted	Co-Curricular Activity Activity	Co-Curricular Activity Hours Alloted
1.	Nov	IstWeek	Curve fitting: Least square methods, fitting a Straight line non linear curve fitting	Additional Problems	Teaching	10	Assignments	1
		IIndWeek	Curve fitting by sum of exponentials					
2.	Dec	Istweek	Numerical differentiation and Numerical Integration	Additional Problems Downloaded Material	Teaching	24	Assignments Quiz Prof.Srinivasa Ramanujan birthday Celebrations	2 1
		IIndweek	Errors in numerical differentiation					
		IIIrdweek	Max and min values of tabulated functions Simpson's $\frac{1}{3}$rd rule and $\frac{3}{8}$th rules					
		IVthweek	Trapezoidal rule, Weddle's rule, Boole's rule.					
3.	Jan	Istweek	Linear system of equations, solution of linear System	Additional Problems Downloaded Material	Teaching	24	Slip test Assignment	1 1
		IIndweek	Direct methods, matrix inversion method					
		IIIrdweek	Gaussian elimination method, method of Factorization, III-conditioned linear system					
		IVthweek	Iterative method, Jacobi's method, Gauss-seidal method.					
4.	Feb	Istweek	Differential equations in numerical analysis	Additional Problems Downloaded Material	Teaching	24	Slip test Assignment Project works	1 1
		IIndweek	Taylor's series, Euler's, Modified Euler's					
		IIIrdweek	Picard's method					
		IVthweek	Runge-Kutta methods					
5.	March	Istweek	Revision	Counter Examples	Teaching	6	Slip test Assignment	1 1

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DEPARTMENT OF MATHEMATICS CURRICULAR PLAN 2019-20
III B.Sc Paper-VIIIB-2, Semester –VI
(Special Functions)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Nov	IstWeek	Hermite Differential Equation, Solution of Hermite Equation	Additional Problems	Teaching	10	Assignments	1
		IIndWeek	Generating function, Other forms of Hermite Polynomial					
2.	Dec	Istweek	First few Hermite Polynomials, Orthogonal properties of Hermite Polynomials	Additional Problems Downloaded Material	Teaching	24	Assignments Quiz Prof.Srinivasa Ramanujan birthday Celebrations	2 1
		IIndweek	Recurrence formulae for Hermite Polynomials					
		IIIrdweek	Laguerre's Differential Equation, Solution of Laguerre's Polynomials,					
		IVthweek	First few Laguerre Polynomials, Orthogonal property of the Laguerre Polynomials, Recurrence formulae					
3.	Jan	Istweek	Definition, Solution of Legendre's equation, Defintion of $P_n(x)$ & $Q_n(x)$	Additional Problems Downloaded Material	Teaching	24	Slip test Assignment	1 1
		IIndweek	General sol of Legendre's eqn $P_n(x)$ is the co efficient of h^n . Orthogonal properties of Legendre's eqn					
		IIIrdweek	Recurrence formulae, Rodrigue's formula.					
		IVthweek	Def, solution of Bessel's general Differential equation General Solution of Bessel's equation,					
4.	Feb	Istweek	Integration of Bessel's equation in series for n =0, Defintion of $J_n(x)$, Recurrence formulae for $J_n(x)$	Additional Problems Downloaded Material	Teaching	24	Slip test Assignment Project works	1 1
		IIndweek	Generating function for $J_n(x)$, Euler's Integrals- Beta and Gamma functions, Elementary properties of functions					
3.	August	IIIrdweek	Transformation of Gamma functions, Another form of Beta function					
		IVthweek	Relation between Beta and Gamma Functions, Other Transformation					
5.	March	Istweek	Revision	Counter examples	Teaching	6	Slip test	1