

Rishi Bankim Chandra College for Women
Academic Calendar for the Session : 2024-2025
Department of Mathematics

Duration : July - December					
Semester	Course Code	Name of the Course	Description	Name of Teacher	No. of classes
Sem-1	MTMDSC101T	Number Theory	Well ordering principle, congruence relation, Euler phi function	SM	30
		Algebra	Classical Algebra, Complex number, Theory of Equation	SM	30
			Matrix Theory	NP	30
	MTMCOR101T	Classical Algebra	Complex number, Theory of Equation, inequality	SM	20
		Abstract Algebra	Relation, mapping, group theory, Ring, Field	SM	20
		Linear Algebra	Matrix, Vector space	NP	15
	MTMHSE101M	C Programming Language	Basics of Computer Programming, Fundamentals of Programming, Statements, Arrays, Multi-dimensional arrays, Functions	NP	15
Sem-3	MTMDSC303T	Analytical Geometry (2D & 3D)	Pair of straight line, tangent, normal, poles and polars, plane, straight line in 3D, sphere, cylinder, cone	SM	50
	MTMDSC303T	Vector Analysis	Scalar tripple product, vector functions, limit, continuity, differentiation and integration of vectors, Green's theorem & Stokes theorems, line integrals, surface and volume integrals	NP	25
	MTMCOR303T	Ordinary differential equation	First order exact equation, integrating factors, linear homogeneous and non-homogeneous simultaneous differential equation	SM	20
		Partial differential equation	Order and degree, first order PDE, solution of first order quasi linear PDE, Charpit's method	NP	20
Sem-5	MTMACOR11T	Partial Differential Equations, Applications of Ordinary Differential Equations	Partial Differential Equations, Heat equation, Wave equation and Laplace equation, Cauchy problem, Central force	NP	32
	MTMACOR12T	Group Theory II	Automorphism, Internal direct product, finite abelia group, Group Action, Class equation, Sylow theorem, simple group, Class equation, Sylow theorem, simple group	SM	40
	MTMADSE01T	Linear Programming	Basic solution, Graphical method, Simplex method, M-Method, Transportation problem, Assignment problem, Game theory	SM	48
	MTMADSE02T	Number Theory	Linear diophantine equation, prime number, Linear congruence, Chinese remainder theorem, arithmetic function, Euler theorem, primitive roots	SM	42
	MTMGDSE01T	Matrices	Vector space, linear independence, rank of matrix, eigen value, eigen vector, solutions of linear homogeneous and non-homogeneous equations	NP	30

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Semester	Course Code	Name of the Course	Description	Name of Teacher	No. of classes
Sem-2	MTMDSC202T	Limit, Continuity, Differentiability	Successive differentiation, Euler's theorem, mean value theorem	SM	33
		Integral Calculus	Reduction formula, Beta & Gamma function	SM	15
		Application of Calculus	Tangent and normal, curvature, Asymptote, envelopes, volume and surface area of solids of revolution	NP	40
	MTMCOR202T	Limit, Continuity, Differentiability	Successive differentiation, Euler's theorem, mean value theorem	SM	25
		Integral Calculus	Reduction formula, Beta & Gamma function	SM	10
		Application of Calculus	Tangent and normal, curvature, Asymptote, envelopes, volume and surface area of solids of revolution	NP	30
	MTMHSE202M	Python language	Variable and expressions, conditionals, loops, functions and strings, files and modules	NP	10
Sem-4	MTMDSC404T	Differential equation	Ordinary differential equation, Clairaut's, Bernoulli's equation, Lipschitz condition, system of linear equation of higher order, method of undetermined coefficient	SM	24
		Mechanics	Elementary statics, coplanar system of forces, particle dynamics	NP	20
	MTMDSC405T	Real Analysis	Set in $\mathbb{R}$, sequence & series, limit, continuity, differentiability of a function	SM	40
	MTMDSC406T	Group Theory	Elementary properties of Groups, Subgroup, Cyclic group, Normal Subgroup, External direct product, Group homomorphism	SM	25
		Number Theory	Linear diophantine equation, prime number, Linear congruence, Chinese remainder theorem, arithmetic function, Euler theorem, primitive roots	SM	20
	MTMDSC407T	Partial Differential Equations	Various methods of solution of PDE	NP	10
		Integral transforms	Fourier transform, Laplace transform	SM	28
	MTMCOR404T	Probability Theory	Sample space, random variables, probability density function, discrete distribution, binomial & Poisson distribution	SM	20
		Mechanics	Motion in a straight line, work power energy, simple harmonic motion, velocity and acceleration, central orbit	NP	20
Sem-6	MTMACOR13T	Metric Spaces and Complex Analysis	Open ball, open & closed set, sequence, Cauchy sequence, completeness, compactness, connectedness	SM	24
			Cauchy-Riemann equation, analytic function, contour integrals, Cauchy integral formula, Liouville's theorem, Lorentz series	NP	30
	MTMACOR14T	Ring Theory and Linear Algebra II	Polynomial rings, PID, UFD, Euclidean domain	SM	20
			dual space, dual basis, transpose of linear transformation, eigen spaces of a linear operator, Cayley-Hamilton theorem, inner product spaces and norms, Grams-Schmidt orthogonalisation process	NP	24
	MTMADSE04T	Theory of Equations	General properties of a polynomial, Descarte's rule of sign, Cardon's method, Ferarri's method, Starm's theorem	SM	30

	MTMADSE06T	Mechanics	Statics & rigid dynamics	NP	34
	MTMGDSE04T	Linear Programming	Basic solution, Graphical method, Simplex method, M-Method, duality theory	SM	32