

			Second order linear equations with variable coefficients, Euler-Cauchy equation;
	06-09-2024		Variable Coefficient DE, Laplace Transform and Solving IVP
	07-09-2024		
	08-09-2024	Test 5	Ordinary Differential Equation
Statics	09-09-2024		Equilibrium of a system of particles
	10-09-2024		
	11-09-2024		Principle of Virtual Work
	12-09-2024		
	13-09-2024		Common Catenary
	14-09-2024		
	15-09-2024		Friction
	16-09-2024		Stability of equilibrium
	17-09-2024		
Dynamics	18-09-2024		Rectilinear motion, simple harmonic motion,
	19-09-2024		
	20-09-2024		Constrained motion
	21-09-2024		
	22-09-2024		
	23-09-2024		Kepler's laws, orbits under central forces.
	24-09-2024		
	25-09-2024		
	26-09-2024		Projectiles
	27-09-2024		Work and energy, conservation of energy, Momentum
	28-09-2024		
	29-09-2024	Test 6	Statics and Dynamics
Vector Algebra	30-09-2024		Scalar and vector fields, differentiation of vector field of a scalar variable; Gradient, divergence and curl in cartesian and cylindrical coordinates; Higher order derivatives;
	01-10-2024		
	02-10-2024		Vector identities and vector equations. Application to geometry: Curves in space, Curvature and torsion; Serret-Frenet's formulae.
	03-10-2024		
	04-10-2024		Gauss and Stokes' theorems, Green's identities.
	05-10-2024		
	06-10-2024	Test 7	Vector Algebra
	13-10-2024	Test 8	Paper I: Complete syllabus
Modern Algebra	14-10-2024		Groups, subgroups
	15-10-2024		
	16-10-2024		Cyclic groups, cosets, Lagrange's Theorem
	17-10-2024		
	18-10-2024		Normal subgroups, quotient groups, permutation groups,
	19-10-2024		
	20-10-2024		Homomorphism of groups, basic isomorphism theorems, Cayley's theorem.
	21-10-2024		
	22-10-2024		Rings, subrings
	23-10-2024		
	24-10-2024		Ideals
	25-10-2024		
	26-10-2024		Integral domains,
	27-10-2024		
28-10-2024		Homomorphisms of rings	
29-10-2024			
	30-10-2024		Principal ideal domains, Euclidean domains and unique factorization domains

	31-10-2024		
	01-11-2024		Fields, quotient fields.
	02-11-2024		
	03-11-2024	Test 9	Modern Algebra
Real Analysis	04-11-2024		Real number system as an ordered field with least upper bound property, completeness of real line
	05-11-2024		Sequences, limit of a sequence, Cauchy sequence
	06-11-2024		
	07-11-2024		Series and its convergence
	08-11-2024		
	09-11-2024		Absolute and conditional convergence of series of real and complex terms, rearrangement of series.
	10-11-2024		
	11-11-2024		Uniform convergence, differentiability and integrability for sequences and series of functions, uniform continuity of functions
	12-11-2024		
	13-11-2024		
	14-11-2024		Riemann integral
	15-11-2024		
	16-11-2024		
	17-11-2024	Test 10	Real Analysis
Complex Analysis	18-11-2024		Analytic functions, Cauchy-Riemann equations
	19-11-2024		
	20-11-2024		Cauchy's theorem, Cauchy's integral formula, power series representation of an analytic function, Taylor's series; Singularities; Laurent's series
	21-11-2024		
	22-11-2024		Cauchy's residue theorem; Contour integration.
	23-11-2024		
	24-11-2024	Test 11	Complex Analysis
	01-12-2024	Test 12	Modern Algebra, Real Analysis, Complex Analysis
Partial Differential Equations	02-12-2024		
	03-12-2024		Family of surfaces in three dimensions and formulation of partial differential equations; Solution of quasilinear partial differential equations of the first order
	04-12-2024		
	05-12-2024		Cauchy's method of characteristics; Linear partial differential equations of the second order with constant coefficients, canonical form
	06-12-2024		
	07-12-2024		
	08-12-2024		Equation of a vibrating string
	09-12-2024		
	10-12-2024		Heat equation
	11-12-2024		
	12-12-2024		Laplace equation and their solutions
	13-12-2024		
	14-12-2024		
	15-12-2024	Test 13	Partial Differential Equations
Linear Programming Problem	16-12-2024		
	17-12-2024		Linear programming problems, basic solution, basic feasible solution and optimal solution; Graphical method
	18-12-2024		
	19-12-2024		
	20-12-2024		
	21-12-2024		Simplex method of solutions; Duality
	22-12-2024		
	23-12-2024		
	24-12-2024		Transportation Problem
	25-12-2024		

	26-12-2024		Assignment Problem
	27-12-2024		
	28-12-2024		
	29-12-2024	Test 14	Linear Programming Problem
Numerical Analysis and Computer Programming	30-12-2024		Solution of algebraic and transcendental equations of one variable by bisection, Regula-Falsi and Newton-Raphson methods
	31-12-2024		
	01-01-2025		
	02-01-2025		Solution of system of linear equations by Gaussian elimination and Gauss-Jordan (direct), Gauss- Seidel (iterative) methods
	03-01-2025		
	04-01-2025		Newton's (forward and backward) interpolation
	05-01-2025		
	06-01-2025		
	07-01-2025		Lagrange's interpolation
	08-01-2025		Numerical integration: Trapezoidal rule, Simpson's rules, Gaussian quadrature formula.
	09-01-2025		
	10-01-2025		
	11-01-2025		Numerical solution of ordinary differential equations: Euler and Runge-Kutta methods
	12-01-2025		
13-01-2025			
14-01-2025	Test 15	Numerical Analysis and Computer Programming	
Mechanics	15-01-2025		D' Alembert's principle and; Moment of inertia;
	16-01-2025		Motion of rigid bodies in two dimensions
	17-01-2025		
	18-01-2025		
	19-01-2025		Generalized coordinates; Lagrange's equations; Hamilton equations
	20-01-2025		
21-01-2025	Test 16	Mechanics	
Fluid Dynamics	22-01-2025		Equation of continuity
	23-01-2025		Stream-lines, path of a particle; Potential flow
	24-01-2025		
	25-01-2025		
	26-01-2025		Euler's equation of motion for inviscid flow
	27-01-2025		Two-dimensional and axisymmetric motion; Sources and sinks
	28-01-2025		
	29-01-2025		
	30-01-2025		Vortex motion
	31-01-2025		
	01-02-2025		
	02-02-2025		
	03-02-2025		Navier-Stokes equation for a viscous fluid
04-02-2025	Test 17	Fluid Dynamics	
09-02-2025	Test 18	Paper II	
23-02-2025	Test 19, Test 20	Paper I + Paper II	