Tentative Lecture Plan

Topic	Description	Lectures
Linear Algebra	R^n as a vector space	L1
	Linear dependence and independence of vectors in R^n	L2
	Basis and Dimension	L3
	Rank and Nullity of a Matrix	L4
	Elementary transformations; Consistency of a System of linear equations: Gauss-Elimination & Gauss-Jordan methods	L5-L6
	Eigen values and Eigen vectors	L7
	Hermitian, Skew-Hermitian and Unitary matrices; Cayley-Hamilton's theorem & its applications	L8
Infinite Series	Definition of Sequence and Infinite Series; Convergence and Divergence of real Sequence and Infinite series	L9
	Convergence of Positive term infinite Series: Comparison tests	L10
	Cauchy's root test	L11
	D' Alembert's Ratio test	L12
	Rabee's test	L13
	Integral test	L14
	Alternating Series: Leibnitz's test	L15
Differential Caleulus	*Functions of one variable:* Successive Differentiation	L16
	Leibnitz's theorem	L17
	Rolle's theorem	L18
	Lagrange's Mean value theorem	L19
	Cauchy's Mean value theorem	L20
	Curvature and Radius of curvature	L21
	Centre of Curvature	L22
	Taylor's and Maclaurin's theorems with Lagrange's form of remainder for a function of one variable; Taylor's and Maclaurin's infinite series for a function of one variable	L23
	Functions of several variables: Partial differentiation and Euler's theorem	L24
	Taylor's and Maclaurin's theorems with Lagrange's form of remainder for a function of two variables; Taylor's and Maclaurin's infinite series for a function of two variables	L25
	Jacobians	L26
	Extreme values for functions of two or more variables	L27
	Lagrange's method of undetermined multipliers	L28
Integral Calculus	Reduction Formulae	L29-L30
	Application of integrals: Lengths of Plane Curves-Rectification	L31
	Area between Plane Curves-Quadrature	L32
	Volume and Surface area of solids of revolution	L33-L34