Lesson Plan

Name of Faculty : Neetu
Discipline : Mathematics
Semester : II
Subject : Maths-II (MAT-102-L)
Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)
Work Load (Lecture/Practical) per week (in hours): **Lectures 05 hours**.

Week	Theory	
	Lecture Day	**Topic (Including Assignment/Test)**
1st	1	Infinite series : Convergence and divergence
	2	Comparison, D' Alembert's ratio
	3	Integral test
	4	Raabe's test
	5	Problems and Solutions
2nd	6	Logarithmic test
	7	Cauchy root test
	8	Alternating series
	9	Absolute and conditional convergence
	10	Problems and Solutions
3rd	11	Matrices & its Applications
	12	Rank of a matrix
	13	Elementary transformations
	14	Elementary matrices
	15	Inverse using elementary transformations
4th	16	Normal form of a matrix
	17	Linear dependence and in dependence of vectors
	18	Consistency of linear system of equations
	19	Linear and orthogonal transformations
	20	Eigen values and Eigen vectors
5th	21	Properties of eigen values
	22	Problems and Solutions
	23	Cayley - Hamilton theorem and its Applications
	24	Exact differential equations
	25	Equations reducible to exact differential equations
6th	26	Applications of Differential equations of first order
	27	first degree to simple electric circuits
	28	Newton's law of cooling
	29	heat flow
	30	Problems and Solutions
7th		----------**Ist Minor Test**----------
8th	31	orthogonal trajectories
	32	Linear differential equations of second
	33	Linear differential equations of higher order
	34	Complete solution
	35	Complementary function
9th	36	particular integral
	37	Cauchy's linear equations
	38	Legender's linear equations
	39	Simultaneous linear equations with constant co-efficients
	40	Applications of linear differential equations to simple pendulum
10th	41	Oscillatory electric circuits
	42	Laplace transforms of elementary functions
	43	Properties of Laplace transforms
	44	Existence conditions
	45	Problems and Solutions
11th	46	Transforms of derivatives
	47	Transforms of integrals, multiplication by t^n
	48	Division by t. Evaluation of integrals by Laplace transforms
	49	Laplace transform of Unit step function
	50	Problems and Solutions
12th	51	Unit impulse function
	52	periodic function
	53	Inverse transforms
	54	Convolution theorem
	55	Problems and Solutions
13th	56	Application to linear differential equations
	57	Simultaneous linear differential equations with constant coefficients.
	58	Formation of partial differential equations
	59	Lagrange's linear partial differential equation
	60	Problems and Solutions
14th		----------**2nd Minor Test**----------
15th	61	Charpit's method.
	62	Method of separation of variables and its applications to wave equation
	63	One dimensional heat equation
	64	Two dimensional heat flow equation
	65	Steady state solutions only