

LESSON PLAN

Name of Faculty: Indra pal Singh
Discipline: B. Tech
Semester: 2nd
Subject: Mathematics II
Lesson Plan Duration : 15 weeks (from January,2018 to April,2018)
Work Load (Lecture/ Practical) per week (in hours): Lectures-04

Week	Theory		Practical	
	Lecture Day	Topic (including assignment/text)	Practical Day (2 lectures each day)	Topic
1 st	1 st	Exact differential equations	N.A	
	2 nd	Equation reducible to exact differential equations case 1, 2		
	3 rd	Equation reducible to exact differential equations case 3, 4		
	4 th	Equation reducible to exact differential equations case 5, 6		
2 nd	5 th	Application of diff. Equation. of 1st order & 1st degree to simple electric circuits		
	6 th	Newton's law of cooling		
	7 th	Heat flow and Applications		
	8 th	Orthogonal trajectories		
3 rd	9 th	Linear differential equations of second and higher order, complete solution		
	10 th	Complementary function and particular integral case 1,2		
	11 th	Complementary function and particular integral case 3,4		
	12 th	Particular integral case 5,6		
4 th	13 th	Method of variation of parameters to find particular integral		
	14 th	Cauchy's linear equations		
	15 th	Legendre's linear equations		
	16 th	Simultaneous linear equations with constant co-efficient		
5 th	17 th	Oscillatory electric circuits		
	18 th	Problems on Section-B		

	19 th	Problems on Section-B		
	20 th UNIT II	Laplace transforms of elementary functions		
6 th	21 st	Elementary Properties of Laplace transforms		
	22 nd	Existence conditions, transforms of derivatives		
	23 rd	Multiplication by tn		
	24 th	Transforms of integrals		
7 th	25 th	Division by t		
	26 th	Evaluation of integrals by Laplace transforms		
	27 th	Second shifting theorem		
	28 th	Inverse Laplace transform		
8 th	29 th	Applications of Inverse Laplace transform		
	30 th	Convolution theorem		
	31 st	Application to linear differential equations		
	32 nd	Boundary value problems with constant coefficient		
9 th	33 rd	Simultaneous linear differential equations with constant coefficient		
	34 th	Problems on Unit II		
	35 th	Problems on Unit II		
	36 th UNIT 3RD	Formation of partial differential equations		
10 TH	37 th	Lagrange' linear partial differential equation		
	38 th	First order non-linear partial differential equation case 1		
	39 th	First order non-linear partial differential equation case 2,3		
	40 th	First order non-linear partial differential equation case 4		
11 TH	41 st	Char pit's method		
	42 nd	Homogeneous partial differential equation of 2nd order		
	43 RD	Homogeneous partial differential equation of higher		

		order		
	44 TH	Method of separation of variables		
12 TH	45 TH	Applications to wave equation		
	46 TH	One dimensional heat equation		
	47 TH	Problems on Unit III		
	48 TH	Problems on Unit III		
13 TH	49 TH (4TH Unit)	Convergent Divergent of infinite series		
	50 TH	Comparison test, P-series Test		
	51 ST	Alembert ratio test		
	52 ND	Cauchy's root test		
14 TH	53 RD	Rabee's test		
	54 TH	Logarithmic test, Gauss test		
	55 TH	Cauchy's integral test		
	56 TH	Leibnitz's test on alternating series		
15 TH	57 TH	Absolute convergence of series		
	58 TH	Conditional convergence		
	59 TH	Problems on Unit IV		
	60 TH	Problems on Unit IV		