

Lesson Plan

Name of the Faculty : Dr. Pardeep Singh
Discipline : Applied Sciences & Humanities
Semester : 2nd (Mech. Engg.)
Subject : Calculus and Ordinary Differential Equations (BS-136A)
Lesson Plan Duration : 15 Weeks (from January, 2020 to April, 2020)

Work Load: Lecture: 03, Tutorial: 01 per week

Week	Theory	
	Lecture Day	Topic(including assignment /test)
1 st	1 st	Exact differential equation
	2 nd	Linear and Bernouli's Equations
	3 rd	Euler's equations
2 nd	4 th	Equation solvable for p & y
	5 th	Equation solvable for x
	6 th	Clairaut's type differential equations of higher orders
3 rd	7 th	Second order linear differential equations with constt. coefficients
	8 th	Method of variation of parameters
	9 th	Cauchy linear differential equations
4 th	10 th	Legendre's linear differential equations
	11 th	Test
	12 th	Multiple Integration
5 th	13 th	Double Integrals
	14 th	Change of order of Integration in Double Integrals
	15 th	Change of variables (Cartesian to polar)
6 th	16 th	Area and volumes
	17 th	Triple Integrals
	18 th	Orthogonal curvilinear coordinates
7 th	19 th	Simple applications Involving cubes, sphere
	20 th	Simple applications Involving rectangular parallelepipeds
	21 st	Test
8 th	22 nd	Introduction of vectors & scalars
	23 rd	Scalar and vector point functions
	24 th	Divergence of a vector field
9 th	25 th	Curl of a vector field
	26 th	Directional derivative
	27 th	line integrals
10 th	28 th	Volume integral
	29 th	Surface integral,
	30 th	Green's theorem
11 th	31 st	Gauss Divergence Theorem
	32 nd	Stoke's Theorem
	33 rd	Test

12 th	34 th	Differentiation
	35 th	Cauchy-Riemann Equations
	36 th	Analytic Functions
13 th	37 th	Harmonic Functions
	38 th	Finding harmonic Conjugates
	39 th	Elementary analytic functions and their properties
14 th	40 th	Contour Integrals
	41 st	Cauchy –Goursat Theorem, Cauchy Integral formula
	42 nd	Taylor’s Series, Zeros of Analytic Functions
15 th	43 rd	Singularities, Laurent’ Series
	44 th	Residues, Cauchy Residue Theorem
	45 th	Test

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