

BHAI GURDAS INSTITUTE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF APPLIED SCIENCES

LESSON PLAN

Subject Name: - Mathematics-II

Subject Code: - BTAM202-18

Year: - 2022-23

Semester: - 2ND

Lecture	Unit		Topic	Teaching Aids	Reference
Lecture :1	UNIT-I	WEEK-1	Introduction to ordinary differential equation	Chalk Board	Differential equation by Dr.Jitender Rattan
Lecture :2			Linear differential equations	Presentation	
Lecture :3			Bernoulli's equation	Chalk Board	
Lecture :4			Numerical problems	Chalk Board	
Lecture :5			Euler's and exact differential equation	Presentation	
Lecture :6			Problem discussion	Chalk Board	
Lecture :7		WEEK2	Methods to find the solution of exact differential equations	Chalk Board	Differential equation by Dr.Jitender Rattan
Lecture :8			Numerical problems	Chalk Board	
Lecture :9			Homogeneous function and homogeneous equations	Chalk Board	
Lecture :10			5 Rules for finding integrating factor	Chalk Board	
Lecture :11			Differential equation of first and higher order	Presentation	
Lecture :12			Problem discussion	Chalk Board	
Lecture :13		WEEK 3	Equation solvable for "p"	Chalk Board	Differential equation by Dr.Jitender Rattan
Lecture :14			Equation solvable for "x"	Chalk Board	
Lecture :15			Equation solvable for "y"	Chalk Board	
Lecture :16			Numerical problems	Chalk Board	
Lecture :17			Clariaut's equation	Chalk Board	
Lecture :18			Equation reducible to	Chalk Board	

			Clariaut's form			
Lecture :19		WEEK 4	Method of variation of parameter	Chalk Board		
Lecture :20			Examples of method of variation of parameter	Presentation	Differential equation by Dr.Jitender Rattan	
Lecture :21			Cauchy Euler equation	Chalk Board		
Lecture :22			Numerical problems	Chalk Board		
Lecture :23			Revision	Chalk Board		
Lecture :24			Power series solution	Chalk Board		
Lecture :25	UNIT-II	WEEK 5	Partial Differential equations	Chalk Board		Differential equation by Dr.Jitender Rattan
Lecture :26			Formation of PDE	Chalk Board		
Lecture :27			Numerical problems	Chalk Board		
Lecture :28			First order Partial differential equation	Chalk Board		
Lecture :29			Solution of first order linear PDE	Chalk Board		
Lecture :30			Problem discussion	Chalk Board		
Lecture :31			WEEK6	Solution of first order non-linear PDE	Chalk Board	Differential equation by Dr.Jitender Rattan
Lecture :32				Homogeneous linear PDE of second order	Chalk Board	
Lecture :33				Problem discussion	Chalk Board	
Lecture :34				Non Homogeneous linear PDE of second order	Chalk Board	
Lecture :35				Complementary function of Homogeneous linear PDE of second order	Chalk Board	
Lecture :36				Numerical problems	Chalk Board	
Lecture :37			WEEK 7	Complementary function of non Homogeneous linear PDE of second order	Chalk Board	Differential equation by Dr.Jitender Rattan
Lecture :38			Particular integral of Homogeneous linear PDE and non homo	Chalk Board		
Lecture :39			Classification of lagendre's equation	Chalk Board		

Lecture :40		WEEK 8	Numerical problems	Chalk Board	Differential equation by Dr.Jitender Rattan
Lecture :41			Charpit method	Chalk Board	
Lecture :42			Examples of Charpit's method	Presentation	
Lecture :43			Rules for finding particular integral of non-homogeneous PDE	Chalk Board	
Lecture :44			Equation reducible to PDE with constant coefficients	Chalk Board	
Lecture :45			Numerical problems	Chalk Board	
Lecture :46			Separation of variable method to simple problems	Chalk Board	
Lecture :47			Examples on Separation of variable method to simple problems	Chalk Board	
Lecture :48		Problem discussion	Chalk Board		
Lecture :49	UNIT-III	WEEK 9	Introduction to numerical method	Chalk Board	S.Chand Numerical methods
Lecture :50			Bisection method	Chalk Board	
Lecture :51			Regula Falsi method	Chalk Board	
Lecture :52			Numerical problems	Chalk Board	
Lecture :53			Newton Raphson method	Class Test	
Lecture :54			Interpolation and finite differences operators	Chalk Board	
Lecture :55		WEEK 10	Newton's forward and backward difference formulae	Chalk Board	S.Chand Numerical methods

Lecture :56	Unit – IV		Numerical problems	Chalk Board		
Lecture :57			Gauss's forward and backward formulae	Chalk Board		
Lecture :58			Trapezoidal rule	Presentation		
Lecture :59			Problem discussion	Chalk Board		
Lecture :60		WEEK 11	Simpson;s 1/3 rd rule	Chalk Board		S.Chand Numerical methods
Lecture :61			Simpson's 3/8 rule	Chalk Board		
Lecture :62			Numerical problems Taylor's series	Chalk Board		
Lecture :63			Numerical problems	Chalk Board		
Lecture :64		WEEK 12	Euler's and modified Euler's method	Chalk Board		N.P. Bali and M. Goyal, "A text book of Engineering Mathematics"
Lecture :65			Runge-Kutta method of 4 th order	Chalk Board		
Lecture :66			Bisection method	Chalk Board		
Lecture :67			Milne's and Adam's method	Chalk Board		
Lecture :68		WEEK 13	Finite difference solution of 2D Laplace and poission equation	Chalk Board		N.P. Bali and M. Goyal, "A text book of Engineering Mathematics"
Lecture :69			Implicit and Explicit method for 1D	Class Test		
Lecture :70	Numerical problems		Chalk Board			
Lecture :71	Bender-Schmidt and Crank-Nicholson methods		Chalk Board			
Lecture :72	WEEK 13	Raabes test	Chalk Board	N.P. Bali and M. Goyal, "A text book of Engineering Mathematics"		
Lecture :73		Bender-Schmidt and Crank-Nicholson methods	Chalk Board			
Lecture :74		Finite difference for wave equation	Chalk Board			

