DELHI COLLEGE OF TECHN MANAGEMENT(DCTM), PALWAL	**INSTRUCTIONAL PLAN**	**RECORD NO.: QF/ACD/009** **Revision No.: 00**

Name of Faculty: Dr. Pawan Kumar Pachaury Department: B.TECH

Course Title: MATHEMATICS Course Number: **BTCH (CS/ECE)**

Semester/Section: Fourth Semester Session: Jan 2018 to Aug 2018

Instruction Plan Details :

Lecture No.	Topics to be covered	References	Remarks
Plan for course, to be covered before 1st sessional Exam			
	UNIT I		
1, 2	Fourier Series and Fourier Transforms : Euler's formulae, conditions for a Fourier expansion,	Mathematics IIIrd, N. P. Bali	
3, 4, 5	change of interval, Fourier expansion of odd and even functions, Fourier expansion of square wave		
6, 7.	rectangular wave, saw-toothed wave, half and full rectified wave, half range sine and cosine series		
8, 9, 10.	Fourier integrals, Fourier transforms, Shifting theorem (both on time and frequency axes),		
11, 12, 13	Fourier transforms of derivatives, Fourier transforms of integrals		
14, 15, 16	Convolution theorem, Fourier transform of Dirac-delta function.		
	UNIT II		
17, 18,19, 20	Functions of Complex Variable: Definition, Exponential function,		
21, 22, 23	Trigonometric and Hyperbolic Functions, Cauchy-Riemann equations, necessary and sufficient conditions for a function to be analytic,		
Plan for course, to be covered before 2ND sessional Exam			
24, 25	polar form of the Cauchy-Riemann equations		
26, 27,28	Harmonic functions, application to flow problems. Integration of complex functions. Cauchy-Integral theorem and formula.		
	UNIT III	3	

29, 30, 31	Power series, radius and circle of convergence, Taylor's Maclaurin's and Laurent's series	Mathematics IIIrd, N. P. Bali	
32, 33	Zeroes and singularities of complex functions, Residues		
34	Evaluation of real integrals using residues (around unit and semi circle only)		
35, 35, 36	Probability Distributions and Hypothesis Testing: Conditional probability, Bayes theorem and its applications		
37, 38	Expected value of a random variable. Properties and application of Binomial, Poisson and Normal distributions.		
Plan for course, to be covered before 2ND sessional Exam			
	UNIT IV		
39, 40, 41, 42	Testing of a hypothesis, tests of significance for large samples	Mathematics IIIrd, N. P. Bali	
43, 44	Student's t-distribution (applications only), and Chi-square test of goodness of fit		
45, 46, 47	Linear Programming: Linear programming problems formulation		
48,49,50 ,51	solving linear programming problems using Graphical method (ii) Simplex method (iii) Dual simplex method		
	CT 2		
52	Revision		
53	Revision		
54	Revision		
	Question Bank (Answers of Two Sessional exams)		