



Department of Basic Sciences and Humanities

Lesson Plan & Work-done Diary for AY:2026-27, ODD Semester

Course with Code: Complex Analysis, Transform Techniques and Optimization- 1BMATEE301				Faculty:			Semester & Section: III EEE	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
Module-1 Complex Analysis								
1		Review of a function of a complex variable, limits, continuity and differentiability	Chalk and Talk					
2		Analytic functions-Cauchy-Riemann equations in Cartesian form-problems	Chalk and Talk					
3		Analytic functions-Cauchy-Riemann equations in Polar form-problems	Chalk and Talk					
4		Problems on Cauchy-Riemann equations- cartesian & polar form	Chalk and Talk					
5		Construction of analytic functions by Milne-Thomson method	Chalk and Talk					
6		Construction of analytic functions by Milne-Thomson method	Chalk and Talk					
7		Complex integration: Line integral of a complex function	Chalk and Talk					
8		Cauchy's theorem and Cauchy's integral formula and problems.	Chalk and Talk					
9		Cauchy's theorem and Cauchy's integral formula and problems.	Chalk and Talk					
10		Problems on Cauchy's theorem and Cauchy's integral formula	Chalk and Talk					



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Module-2 Fourier Series								
11		Periodic functions, Euler's Formula, Conditions for Fourier series expansion (Dirichlet's condition)	Chalk and Talk					
12		Fourier series of functions - having points of discontinuity, with period $(0, 2\pi)$	Chalk and Talk					
13		Fourier series of functions - having points of discontinuity, with period $(-\pi, \pi)$	Chalk and Talk					
14		Problems on period $(0, 2\pi)$ and $(-\pi, \pi)$	Chalk and Talk					
15		Even and odd functions $(0, 2\pi)$ and $(-\pi, \pi)$	Chalk and Talk					
16		Even and odd functions $(0, 2\pi)$ and $(-\pi, \pi)$	Chalk and Talk					
17		Half range Fourier series	Chalk and Talk					
18		Half range Fourier series	Chalk and Talk					
19		Practical harmonic analysis.	Chalk and Talk					
20		Practical harmonic analysis.	Chalk and Talk					



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Module-3 Fourier Transforms and Z-Transforms								
21		Standard Z-transforms-Linearity property, Damping rule, Shifting rule & problems	Chalk and Talk					
22		Problems on Z-transform. Initial value theorem, Final value theorem-Problems	Chalk and Talk					
23		Standard Inverse Z-transforms by Partial fraction	Chalk and Talk					
24		Problems on Inverse Z-transforms	Chalk and Talk					
25		Solution of difference equation using Z-transforms	Chalk and Talk					
26		Solution of difference equation using Z-transforms	Chalk and Talk					
27		Infinite Fourier transform and Inverse Fourier transform	Chalk and Talk					
28		Fourier transform and Fourier sine and Cosine transform	Chalk and Talk					
29		Fourier transform and Fourier sine and Cosine transform	Chalk and Talk					
30		Inverse Fourier sine and cosine transforms. Problems	Chalk and Talk					



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Module-4 Probability Distributions and Sampling theory								
31		Discrete & Continuous RV with examples and Probability density function - Problems	Chalk and Talk					
32		Binomial Distribution, Introduction & Problems	Chalk and Talk					
33		More Problems on Binomial Distribution and Poisson Distribution, Introduction & Problems	Chalk and Talk					
34		Exponential Distribution - Problems	Chalk and Talk					
35		Normal Distribution, Introduction, Problems	Chalk and Talk					
36		Standard Normal Distribution & Problems	Chalk and Talk					
37		Sampling Theory, Inroduction, Testing of hypothesis – Null & Alternative hypothesis	Chalk and Talk					
38		Standard error, Type-1 & Type-2 errors, Test of significance & Confidence intervals	Chalk and Talk					
39		Student's t-distribution – Definition & Problems	Chalk and Talk					
40		Student's t-distribution and Chi-square distribution	Chalk and Talk					



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Module-5 Linear Programming Problems								
41		Introduction to optimization techniques	Chalk and Talk					
42		Formulation of the problems, Introduction to Linear programming	Chalk and Talk					
43		Graphical solution	Chalk and Talk					
44		Graphical solution	Chalk and Talk					
45		Solution by simplex method	Chalk and Talk					
46		Solution by simplex method	Chalk and Talk					
47		Solution by Big M method	Chalk and Talk					
48		Solution by Big M method	Chalk and Talk					



	Activity	Planned	Actual	Remarks
1	Theory Classes	48		
2	Assignments/ Quizzes/ Self-study	5 Assignments, 5 quizzes		
3	Tutorials/ Extra classes		-	
4	Internal Assessments	3		
5	ICT based Teaching (% of usage in Curriculum)			
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	