



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN  
(Autonomous Institution, Affiliated to Anna University, Chennai)



DEPARTMENT OF EEE  
LESSON PLAN

Sub code & Name: U15MA304/ Complex Analysis and Partial Differential Equations<sup>#</sup>

YEAR / SEMESTER :II YEAR / III SEMESTER A &B

UNIT-I COMPLEX VARIABLE				
S.NO	Topics to be covered	Duration in Min	Teaching Aid	Reff Book
1	Introduction to Definition	45	BB	T1,T2,R1
2	Properties of analytic functions	45	BB	T1,T2,R1
3	Cauchy-Riemann equations	45	BB	T1,T2,R1
4	Tutorial I	45	BB	T1,T2,R1
5	Harmonic functions	45	BB	T1,T2,R1
6	Problems	45	BB	T1,T2,R1
7	Bilinear transformations	45	BB	T1,T2,R1
8	Problems	45	BB	T1,T2,R1
9	Conformal mapping	45	BB	T2,R1
10	Problems	45	BB	T2,R1
11	Tutorial II	45	BB	T2,R1
12	Revision	45	BB	
UNIT –II COMPLEX INTEGRATION				
1	Introduction to Complex integration	45	BB	T1,T2,R1
2	Cauchy's integral theorem	45	BB	T1,T2,R1
3	Cauchy's integral theorem-cotn..	45	BB	T2,R1
4	Tutorial I	45	BB	T1,T2,R1
5	Cauchy's integral formula for Derivatives	45	BB	T1,T2,R1
6	Taylor's Series	45	BB	
7	Laurent's Series	45	BB	T1,T2,R1
8	Poles and Singularities	45	BB	T2,R1
9	Tutorial II	45	BB	T2,R1
10	Cauchy's Residue Theorem	45	BB	T1,T2,R1
11	Tutorial III	45	BB	T2,R1
12	Revision	45	BB	
UNIT –III FOURIER SERIES				
1	Introduction to Fourier Series	45	BB	T1,T2,R1
2	Periodic functions	45	BB	T1,T2,R1
3	Fourier series	45	BB	T1,T2,R1
4	Dirichlet's condition	45	BB	T1, R1
5	Dirichlet's condition-cotn..	45	BB	T1,T2,R1
6	General Fourier series	45	BB	T1,T2,R1

7	General Fourier series-cotn..	45	BB	T1,T2,R1
8	Odd and Even functions	45	BB	T1,T2,R1
9	Odd and Even functions-problems	45	BB	T1,T2,R1
10	Half range sine and cosine series	45	BB	T1,T2,R1
11	<b>Parseval's identity.</b>	45	BB	T1, R1
12	Revision	45	BB	T1,T2,R1
<b>UNIT – IV FOURIER TRANSFORM</b>				
1	Introduction to Fourier Series	45	BB	T1,T2,R1
2	Fourier integral theorem	45	BB	T1,T2,R1
3	Fourier integral theorem(without proof)	45	BB	T1,T2,R1
4	Tutorial I	45	BB	T1, R1
5	Fourier transform pair	45	BB	T1,T2,R1
6	Fourier transform pair-problems	45	BB	T1,T2,R1
7	Tutorial II	45	BB	T1,T2,R1
8	Sine and cosine transforms	45	BB	T1,T2,R1
9	Sine and cosine transforms-cotn..	45	BB	T1,T2,R1
10	<b>Parseval's identity.</b>	45	BB	T1,T2,R1
11	Revision	45	BB	T1, R1
12	Revision	45	BB	T1,T2,R1
<b>UNIT – V PARTIAL DIFFERENTIAL EQUATIONS</b>				
1	Introduction to PDE	45	BB	T1, T3
2	Classification of linear second order PDE in two variables	45	BB	T1, T3
3	Tutorial I	45	BB	T1, T3
4	Modeling of one dimensional wave equations,	45	BB	T1, T3
5	Problems	45	BB	T1, T3
6	Solutions of one dimensional Heat equations.	45	BB	T1, T3
7	Problems	45	BB	T1, T3
8	Solutions of one dimensional Wave equations	45	BB	T1, T3
9	Problems	45	BB	T1, T3
10	Revision	45	BB	T1, T3
11	Revision	45	BB	T1, T3

## REFERENCES

<b>1</b>	David, A.Bell, 'Electronic Devices and Circuits', 5th Edition, PHI, 2008.
<b>2</b>	Millman and Halkias, 'Electronic Devices and Circuits', McGrawHill International student Edition, 5th Reprint, 1993.
<b>3</b>	Allen M. Heishead, 'Electronic Devices and Circuits-An Introduction'