

Bhoj Reddy Engineering College for Women: Hyderabad  
Department Of Basic Sciences  
Lesson plan of faculty member for the academic year 2016–17

Class: II B Tech

Branch: EEE

Semester: I

Subject: Mathematics - III

Lectures per week: 4 + 1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
<b>UNIT – I: Linear ODE with Variable Coefficients&amp; Series Solution</b>		
1	Introduction – Equations reducible to constant coefficients	14 June 2016
2	Cauchys Differential Equation	15 June 2016
3	Legendre's Differential Equation	16 June 2016
4	Series Solutions, Ordinary Point and Regular Singular point	18 June 2016
5	Tutorial (G1, G2, G3) – Examples of Cauchy's & Legendere's	15 ,17 ,18 June 2016
6	Transformation of non zero singular point to zero singular point	21 June 2016
7	Series solution to D.E. around zero	22 June 2016
8	Method of Frobenious about zero	23 June 2016
9	Examples	25 June 2016
10	Tutorial (G1,G2, G3) – Examples of Series solutions	22,24,25 June 2016
<b>UNIT-II: Special Functions</b>		
11	Legendre's differential equation	28 June 2016
12	General solution of Legendre's equation	29 June 2016
13	Legendre's Polynomials, Properties	30 June 2016
14	Rodrigues Formula	2 July 2016
15	Tutorial (G1, G2, G3) – Examples of Legendre's differential equation	29 June 2016 1,2 July 2016
16	Recurrence Relations	5 July 2016
17	Generating function of Legendre's polynomials	9 July 2016
18	Tutorial (G2, G3)	8, 9 July 2016
19	Orthogonality	12 July 2016
20	Bessels differential equation	13 July 2016
21	Bessel functions properties	14 July 2016
22	Recurrence Relations	16 July 2016
23	Tutorial (G1, G2, G3) – Examples of Recurrence Relations	13, 15, 16 July 2016
24	Orthogonality	19 July 2016
25	Generating function	20 July 2016
26	Trigonometric expansions involving Bessel functions	21 July 2016
<b>UNIT-III: Complex Functions – Differentiation &amp; Integration</b>		
27	Introduction to complex functions	23 July 2016
28	Tutorial (G1, G2, G3) – Examples of Bessel function	20,22,23 July 2016
29	Concepts of Limit, Continuity, Differentiability	26 July 2016
30	Analyticity, Cauchy - Riemann conditions	27 July 2016
31	Problems on CR equations	28 July 2016
32	Harmonic Functions	30 July 2016
33	Tutorial (G1, G2, G3) – Examples of complex functions	27,29,30 July 2016
34	Milne Thompson Method	2 August 2016
35	Line Integral - evaluation along a path	3 August 2016
36	Line Integral Evaluation by Indefinite Integration	4 August 2016
37	Cauchy's Integral Theorem	6 August 2016
38	Tutorial (G1, G2, G3) – Revision	3, 5, 6 August 2016
39	Cauchy's Integral Formula	16 August 2016
40	Cauchy's Integral Formula & Problems	17 August 2016
41	Generalized Integral Formula	18 August 2016

<b>UNIT-IV: Power Series Expansions of Complex Functions &amp; Contour Integration</b>		
42	Radius of Convergence	20 August 2016
43	Tutorial (G1, G2, G3) – Objective question bank	17, 19, 20 August 2016
44	Expansion in Taylor's Series	23 August 2016
45	Examples of Taylor's series	24 August 2016
46	Expansion in Maclaurin's & Laurent's series	27 August 2016
47	Tutorial (G1, G2, G3) – Examples of Cauchy's Integral Theorem	24, 26, 27 August 2016
48	Examples of Maclaurin's & Laurent's series	30 August 2016
49	Singular Point, Isolated Singular Point	31 August 2016
50	Pole, Pole of Order m, Essential Singularity	1 September 2016
51	Residue	3 September 2016
52	Tutorial (G1, G2, G3) – Examples of Taylor's & Laurent's series	31 August, 2, 3 September 2016
53	Evaluation of Residue by Formula	6 September 2016
54	Evaluation of Residue by Laurent Series	7 September 2016
55	Residue Theorem	8 September 2016
56	Examples of Residue Theorem	10 September 2016
57	Tutorial (G1, G2, G3) – Examples of Poles	7, 9, 10 September 2016
58	Evaluation of Integral of the type $\int f(x)dx$	13 September 2016
59	Evaluation of Integral of the type $\int f(x)dx$	14 September 2016
60	Evaluation of Integral of the type $\int f(\cos\theta, \sin\theta)d\theta$	15 September 2016
61	Evaluation of Integral by type $\int f(\cos\theta, \sin\theta)d\theta$	17 September 2016
62	Tutorial (G1, G2, G3) - Examples of Residues	14, 16, 17 September 2016
<b>UNIT-V: Conformal Mapping</b>		
63	Introduction to Conformal Mapping	20 September 2016
64	Standard Transformations - Translation	21 September 2016
65	Magnification & Rotation	22 September 2016
66	Inversion & Reflection	24 September 2016
67	Tutorial (G1, G2, G3) – Examples of integrals	21, 23, 24 September 2016
68	Problems on Translation, Magnification & Rotation	27 September 2016
69	Transformation of $e^z$	28 September 2016
70	Transformation of $\log z$	29 September 2016
71	Transformation of $z^2$	1 October 2016
72	Tutorial (G1, G3) - Examples of Translation & Rotation	28 September, 1 October 2016
73	Bilinear Transformation	4 October 2016
74	Properties of Bilinear Transformation	27 October 2016
75	Examples of Bilinear Transformation	29 October 2016
76	Tutorial (G2, G3) – Examples of $e^z$ , $\log z$ & $z^2$	28, 29 October 2016
77	Determination of Bilinear Transformation when mapping of 3 Points are given	1 November 2016
78	Examples	2 November 2016
79	Revision	3 November 2016
80	Tutorial (G1) – Revision of Objective question bank	2 November 2016

**Text books:**

1. Higher Engineering Mathematics by Dr B S Grewal, Khanna publishers.
2. A text book of Engineering Mathematics by N P Bali, Manesh Goyal.
3. Engineering Mathematics-3 by T K V Iyengar and B Krishna Gandhi.

Name and signature of the faculty: G Sangeetha ----

Name and signature of Head of the Department: K Padma ----