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 - Section: ECE-B Semester: I

Subject: Mathematics - III Lectures per week: 4 + 1 (Tutorial)

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

45	Examples of Taylor's series	26 August 2016
46	Expansion in Maclaurin's & Laurent's series	27 August 2016
47	Tutorial (G2, G1) – Examples of Taylor's & Laurent's series	22, 23 August 2016
48	Singular Point, Isolated Singular Point	31 August 2016
49	Pole, Pole of Order m, Essential Singularity	1 September 2016
50	Residue	2 September 2016
51	Evaluation of Residue by Formula	3 September 2016
52	Tutorial (G1, G3, G2) – Examples of Poles	29, 30 August, 1 September 2016
53	Evaluation of Residue by Laurent Series	7 September 2016
54	Residue Theorem	8 September 2016
55	Examples of Residue Theorem	9 September 2016
56	Evaluation of Integral of the type $\int f(x)dx$	10 September 2016
57	Tutorial (G1, G3) - Examples of Residues	6, 8 September 2016
58	Evaluation of Integral of the type $\int f(x)dx$	14 September 2016
59	Evaluation of Integral of the type $\int f(\cos\theta,\sin\theta)d\theta$	15 September 2016
60	Evaluation of Integral by type $\int f(\cos\theta,\sin\theta)d\theta$	16September 2016
61	Examples	17 September 2016
62	Tutorial (G1, G3) – Examples of integrals	13, 15 September 2016
UNIT-V: **Conformal Mapping**		
63	Introduction to Conformal Mapping	21 September 2016
64	Standard Transformations - Translation	22 September 2016
65	Magnification & Rotation	23 September 2016
66	Inversion & Reflection	24 September 2016
67	Tutorial (G2, G1, G3) - Examples of Translation & Rotation	19, 20, 22 September 2016
68	Transformation of e^z	28 September 2016
69	Transformation of log z	29 September 2016
70	Transformation of z^2	1 October 2016
71	Tutorial (G2, G1, G3) – Examples of Inversion & Reflection	26, 27, 29 September 2016
72	Tutorial (G2, G1) – Examples of e^z, log z & z^2	3, 4 October 2016
73	Bilinear Transformation	27 October 2016
74	Properties of Bilinear Transformation	28 October 2016
75	Determination of Bilinear Transformation when mapping of 3 Points are given	29 October 2016
76	Tutorial (G3) – Examples of Bilinear Transformation	27 October 2016
77	Examples of Bilinear Transformation	2 November 2016
78	Revision	3 November 2016
79	Tutorial (G2, G1, G3) – Revision & Objective questions	31 October, 1, 3 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-III by T K V Iyengar and B Krishna Gandhi.

Name and signature of the faculty: K Padma ----

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