

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

Class: I B Tech  
Subject: **MATHEMATICS-II**

Branch-Section: ECE-A

Semester: II  
Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
<b>Unit-I: Laplace Transforms</b>		
1	Introduction on Laplace transforms.	4 January 2017
2	Laplace transforms of standard functions	4 January 2017
3	Problems on Laplace transforms of standard functions	5 January 2017
4	Tutorial (G1, G2, G3) – Shifting theorems and their problems on Laplace transforms	7 January 2017
5	Problems on Shifting theorems	9 January 2017
6	Derivatives and integrals and Problems on Laplace transforms	11 January 2017
7	Properties- Unit step function, Dirac's delta function, Periodic function	11 January 2017
8	Problems on Unit step function, Dirac's delta function, Periodic function	12 January 2017
9	Tutorial (G1, G2, G3) – Introduction on Inverse Laplace transforms	16 January 2017
10	Shifting theorems and Problems on Inverse Laplace transforms	18 January 2017
11	Derivatives and integrals and Problems on Inverse Laplace transforms	18 January 2017
12	Problems on Derivatives and integrals	19 January 2017
13	Convolution theorem and Problems	21 January 2017
14	Problems on Convolution theorem	23 January 2017
15	Tutorial (G1, G2, G3) – Applications: Solving ordinary differential equations (initial value problems) using Laplace transforms	25 January 2017
16	Problems on Solving ordinary differential equations by L.T	25 January 2017
17	Revision	28 January 2017
<b>Unit-II: Beta and Gamma Functions</b>		
18	Tutorial (G1, G2, G3) – Introduction on Beta and Gamma functions	30 January 2017
19	Gamma function and its properties	1 February 2017
20	Beta function and its properties	1 February 2017
21	Relation between gamma and beta function	2 February 2017
22	Tutorial (G1, G2, G3) – Problems related to Beta function	4 February 2017
23	Problems related to Gamma function	6 February 2017
24	Multiple Integrals – double and triple integrals	8 February 2017
25	Problems on double and triple integrals	8 February 2017
26	Tutorial (G1, G2, G3) – Change of order of integration and its problems	9 February 2017
27	Changes of variables into polar form and its problems	11 February 2017
28	Changes of variables into cylindrical form and its problems	13 February 2017
29	Changes of variables into spherical form and its problems	15 February 2017
30	Finding the area of a region using double integration and its problems	15 February 2017
31	Tutorial (G1, G2, G3) – Finding the volume of a region using triple integration and its problems	16 February 2017
32	Révision	18 February 2017

<b>Unit-III: Multiple Integrals</b>		
33	Gamma function and its properties	20 February 2017
34	Beta function and its properties	22 February 2017
35	Tutorial (G1, G2, G3) – Relation between Gamma and Beta function	22 February 2017
36	Problems related to Beta function	23 February 2017
37	Problems related to Gamma function	25 February 2017
38	Problems related to Beta and Gamma functions	27 February 2017
39	Multiple Integrals – double and triple integrals	1 March 2017
40	Problems on double and triple integrals	1 March 2017
41	Problems on double and triple integrals	2 March 2017
42	Change of order of integration and its problems	4 March 2017
43	Tutorial (G1, G2, G3) – Changes of variables into polar form and its problems	9 March 2017
44	Changes of variables into cylindrical form and its problems	11 March 2017
45	Changes of variables into spherical form and its problems	13 March 2017
46	<b>Applications:</b> Finding areas, volumes & Center of gravity (evaluation using Beta and Gamma functions)	15 March 2017
47	Problems on applications of Beta and Gamma functions	15 March 2017
48	Tutorial (G1, G2, G3) – Révision	16 March 2017
<b>UNIT-IV : Vector Differentiation</b>		
49	Introduction, Scalar point function, Vector point function,	18 March 2017
50	Problems on Scalar point function, Vector point function	20 March 2017
51	Problems on Scalar point function, Vector point function	22 March 2017
52	Gradient, Divergence, Curl and their physical and geometrical interpretation	22 March 2017
53	Problems on Gradient, Divergence	23 March 2017
54	Problems on Curl of Vector point function	25 March 2017
55	Tutorial (G1, G2, G3) – Properties on Solenoidal, Irrotational vector, Potential function	27 March 2017
56	Laplacian operators and problems	30 March 2017
57	Problems on Laplacian operators	1 April 2017
58	Tutorial (G1, G2, G3) – Problems on Gradient, Divergence, Curl	3 April 2017
59	Problems on Gradient, Divergence, Curl	6 April 2017
60	Revision	8 April 2017
61	Tutorial (G1, G2, G3) – Revision	10 April 2017
<b>UNIT-V : Vector Integration</b>		
62	Line integral, work done by force	12 April 2017
63	Problems on work done by force	12 April 2017
64	Problems on work done by force	13 April 2017
65	Surface Integral	15 April 2017
66	Tutorial (G1, G2, G3) – Problems on Surface Integral	17 April 2017
67	Problems on Surface Integral	19 April 2017
68	Volume Integral	19 April 2017
69	Problems on Volume Integral	20 April 2017
70	Potential function and Problems	22 April 2017
71	Tutorial (G1, G2, G3) – Guass Divergence theorem	24 April 2017
72	Problems on Guass Divergence theorem	26 April 2017
73	Problems on Guass Divergence theorem	26 April 2017
74	Green's theorem	27 April 2017
75	Problems on Green's theorem	29 April 2017

76	Tutorial (G1, G2, G3) – Stoke's theorem	1 May 2017
77	Problems on Stoke's theorem	3 May 2017
78	Problems on Stoke's theorem	3 May 2017
79	Discussion of previous question papers	4 May 2017
80	Revision	6 May 2017
81	Tutorial (G1, G2, G3) – Revision	8 May 2017

**Text Books:**

1. Advanced Engineering Mathematics by R K Jain & S R K Iyengar, Narosa Publishers
2. Engineering Mathematics by Srimanthapal and Subodh C. Bhunia, Oxford Publishers

**References:**

1. Advanced Engineering Mathematics by Peter V. O. Neil, Cengage Learning Publishers.
2. Advanced Engineering Mathematics by Lawrence Turyn, CRC Press

Name and signature of the faculty: M.Sathish ----

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