Name of the Institute:	**C. V. Raman Polytechnic**
Department:	**Basic Science**
Semester/Division/Branch:	**1st sem/All Branches**
Subject Name:	**Engineering Mathematics- I Course Code- TH 3**
Total No. of Class	**60**
Faculty Name:	**Dr Soumyarani Mishra**

CLASS NO.	TOPIC	REMARK
	UNIT - I: Trigonometry	
1	Concept of angles, measurement of angles in degrees, grades and radians and their conversions,	
2	T-Ratios of Allied angles (without proof),	
3	Sum, difference formulae and their applications (without proof).	
4	Product formulae (Transformation of product to sum, difference and vice versa).	
5	T- Ratios of multiple angles,	
6	sub-multiple angles (2A, 3A, A/2).	
7	Graphs of sin x, cos x, tan x and ex .	
8	Examples	
9	Classtest	
10	**UNIT-II: Differential Calculus**	
11	Definition of function;	
12	Concept of limits, Four standard limits	
13	Examples	
14	Differentiation of sum, product and quotient of functions.	
15	Examples	
16	Examples	
17	Differentiation of function of a function.	
18	Examples	
19	Differentiation of trigonometric and inverse trigonometric functions,	
20	Examples	
21	Logarithmic differentiation,	
22	Exponential functions.	
23	Examples	
24	Examples	

25	Classtest	
26	**UNIT - III: Algebra**	
27	**Complex Numbers:**	
28	Definition, real and imaginary parts of a Complex number,	
29	polar and Cartesian form	
30	representation of a complex number and its conversion from one form to other,	
31	Examples	
32	conjugate of a complex number, modulus and amplitude of a complex number	
33	Examples	
34	Addition, Subtraction, Multiplication and Division of a complex number.	
35	Examples	
36	De-movier's theorem, its application.	
37	Examples	
38	Examples	
39	Classtest	
40	**Partial fractions:** Definition of polynomial fraction proper & improper fractions and definition of partial fractions.	
41	Examples	
42	To resolve proper fraction into partial fraction with denominator containing non-repeated linear factors,	
43	Examples	
44	repeated linear factors and irreducible non-repeated quadratic factors.	
45	Examples	
46	To resolve improper fraction into partial fraction.	
47	Examples	
48	**Permutations and Combinations:** Value of nPr and nCr.	
49	Examples	
50	Examples	
51	Examples	
52	**Binomial theorem:** Binomial theorem (without proof) for positive integral index (expansion and general form);	
53	binomial theorem for any index first and second binomial approximation with applications to engineering problems	
54	Examples	
55	Examples	
56	Classtest	
57	Assignment	
58	Doubt clearing	
59	Doubt clearing	
60	Doubt clearing	

Signature of Faculty

Signature of HOD