

GOVERNMENT POLYTECHNIC COLLEGE –PURASAWALKAM-CHENNAI 600 012

SUBJECT LOG : ENGINEERING MATHEMATICS I

DEPARTMENT : I year ENGINEERING

Handling staff: S.Hari,A.Elaiyaraja,K.Suresh,K.Shanmugaraja CLASS IT-1&2, CT-1&2, MX-1&2 TOTAL HOURS – 110 HRS

DATE	UNIT	TOPIC	PORTION TO BE COVERED	TEACHING AID	TOTAL HOURS
9/7/18	1.ALGEBRA	1.1.DERTERNMINANT	Introduction	Talk , Chalk & board	7
10/7/18			Definition and expansion of determinants of order 2 and 3	Talk, Chalk & board,	
10/7/18			Definition and expansion of determinants of order 2 and 3	Talk ,Chalk, & board,	
11/7/18			Properties of determinants	Talk ,Chalk, & board,	
12/7/18			Cramer’s rule 2&3 marks	Talk ,Chalk, & board,	
12/7/18			Cramer’s rule 5 marks	Talk ,Chalk, & board,	
13/7/18			Cramer’s rule 5 marks	Talk ,Chalk, & board,	
16/7/18		1.2 MATRICES	Definition – singular , nan singular matrix	Talk ,Chalk, & board,	7
17/7/18			Ad joint of matrix and inverse of matrix 3*3	Talk ,Chalk, & board,	
18/7/18			Ad joint of matrix and inverse of matrix 3*3	Talk ,Chalk, & board,	
19/7/18			Definition of rank of matrix simple problem	Talk ,Chalk, & board,	
19/7/18			Finding rank of a matrix by determinant method 3*4	Talk ,Chalk, & board,	
20/7/18			Finding rank of a matrix by determinant method 3*4	Talk ,Chalk, & board,	
20/7/18		1.3 BINOMIAL THEOREM	Finding rank of a matrix by determinant method 3*4	Talk ,Chalk, & board,	8
23/7/18			Definition of factorial notation permutation & combination	Talk ,Chalk, & board,	
24/7/18			Binomial theorem for positive integral index	Talk ,Chalk, & board,	
25/7/18			Binomial theorem for positive integral index – expansion	Talk ,Chalk, & board,	
25/7/18			Finding of general term	Talk ,Chalk, & board,	
26/7/18			Finding middle term	Talk ,Chalk, & board,	
26/7/18			Finding middle term , coefficient of x^n	Talk ,Chalk, & board,	
27/7/18			Finding of coefficient of term independent x	Talk ,Chalk, & board,	
27/7/18	Binomial theorem for rational index	Talk ,Chalk, & board,			

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30/7/18	2 COMPLEX NUMBERS	2.1. ALGEBRA OF COMPLEX NUMBERS	Definition – real& imaginary simple problem	Talk ,Chalk, & board,	8
31/7/18			Definition – conjugate simple problem	Talk ,Chalk, & board,	
1/8/18			Modulus & amplitude form simple problem	Talk ,Chalk, & board,	
2/8/18			Polar form of a complex numbers	Talk ,Chalk, & board,	
2/8/18			Multiplication and division of complex numbers simple problem	Talk ,Chalk, & board,	
3/8/18			Argand diagram –collinear	Talk ,Chalk, board,ppt&models	
3/8/18			Argand diagram – four points forming square , rectangle	Talk ,Chalk, board,models&ppt	
6/8/18			Argand diagram – four points forming rhombus , parallelogram	Talk ,Chalk, & board,models& ppt	
7/8/18			2.2. DE MOIVER’S THEOREM	De moiver’s statement only	
9/8/18		De moiver’s simple problems		Talk ,Chalk, & board,	
9/8/18		De moiver’s simple problems		Talk ,Chalk, & board,	
10/8/18		De moiver’s simple problems		Talk ,Chalk, & board,	
10/8/18		De moiver’s simple problems		Talk ,Chalk, & board,	
13/8/18		De moiver’s simple problems		Talk ,Chalk, & board,	
14/8/18		De moiver’s simple problems		Talk ,Chalk, & board,	
16/8/18		2.3 ROOTS COMPLEX NUMBERS	Roots of complex numbers finding the n^{th} roots of unity	Talk ,Chalk, & board,	7
16/8/18			Solving equation of the form $x^n \pm 1=0$ where $n \leq 7$ simple problems	Talk ,Chalk, & board,	
20/8/18			Solving equation of the form $x^n \pm 1=0$ where $n \leq 7$ simple problems	Talk ,Chalk, & board,	
21/8/18			Solving equation of the form $x^n \pm 1=0$ where $n \leq 7$ simple problems	Talk ,Chalk, & board,	
23/8/18			Solving equation of the form $x^n \pm 1=0$ where $n \leq 7$ simple problems	Talk ,Chalk, & board,	

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24/8/18		2.3 ROOTS COMPLEX NUMBERS	Solving equation of the form $x^n \pm 1 = 0$ where $n \leq 7$ simple problems	Talk , Chalk, & board,		
24/8/18			Solving equation of the form $x^n \pm 1 = 0$ where $n \leq 7$ simple problems	Talk ,Chalk, & board,		
24/8/18	3. TRIGONOMETRY	3.1 COMPOUND ANGLES	Expansion of $\sin(A \pm B)$ simple problems	Talk ,Chalk, & board,	8	
27/8/18			Expansion of $\sin(A \pm B)$ simple problems	Talk ,Chalk, & board,		
28/8/18			Expansion of $\cos(A \pm B)$ simple problems	Talk ,Chalk, & board,		
29/08/18		INTERNAL EXAMINATION-I				
30/8/18		3.1 COMPOUND ANGLES	Expansion of $\cos(A \pm B)$ simple problems	Talk ,Chalk, & board,		
30/8/18			Expansion of $\tan(A \pm B)$ simple problems	Talk ,Chalk, & board,		
31/8/18			Expansion of $\tan(A \pm B)$ simple problems	Talk ,Chalk, & board,		
31/8/18			Expansion of $\tan(A \pm B)$ simple problems	Talk ,Chalk, & board,		
3/9/18			Expansion of $\cot(A \pm B)$ simple problems	Talk ,Chalk, & board,		
3/9/18		3.2 MULTIPLE ANGLES	Trigonometrical ratios	Talk ,Chalk, & board,		7
4/9/18			Trigonometrical ratios of multiple angles	Talk ,Chalk, & board,		
4/9/18			Trigonometrical ratios of multiple angles of $2A$ & $3A$	Talk ,Chalk, & board,		
5/9/18			Trigonometrical ratios of multiple angles of $2A$ & $3A$ & sub multiple angles	Talk ,Chalk, & board,		
6/9/18			Trigonometrical ratios of multiple angles of $2A$ & $3A$ & sub multiple angles	Talk ,Chalk, & board,		
6/9/18			Trigonometrical ratios of multiple angles of $2A$ & $3A$ & sub multiple angles	Talk ,Chalk, & board,		
7/9/18	Trigonometrical ratios of multiple angles of $2A$ & $3A$ & sub multiple angles		Talk ,Chalk, & board,			
7/9/18	Trigonometrical ratios of multiple angles of $2A$ & $3A$ & sub multiple angles		Talk ,Chalk, & board,			
7/9/18	3.3 SUM & PRODUCT FORMULAE	Trigonometrical ratios of sum and product formulae	Talk ,Chalk, & board,			
10/9/18		Trigonometrical ratios of sum and product formulae simple problems	Talk ,Chalk, & board,			
11/9/18		Trigonometrical ratios of sum and product formulae simple problems	Talk ,Chalk, & board,			

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11/9/18	3. TRIGONOMETRY	3.3 SUM & PRODUCT FORMULAE	Trigonometrical ratios of sum and product formulae simple problems	Talk ,Chalk, & board,	7
12/9/18			Trigonometrical ratios of sum and product formulae simple problems	Talk ,Chalk, & board,	
12/9/18			Trigonometrical ratios of sum and product formulae simple problems	Talk ,Chalk, & board,	
14/9/18			Trigonometrical ratios of sum and product formulae simple problems	Talk ,Chalk, & board,	
17/9/18	4.INVERSE TRIGONOMETRIC RATIOS & DIFFERENTIAL CALCULUS	4.1 INVERSE TRINOMETRIC	Definition of trigonometric ratios	Talk ,Chalk, & board,	7
17/9/18			Relation between inverse trigonometric ratios	Talk ,Chalk, & board,	
18/9/18			Relation between inverse trigonometric ratios simple problems	Talk ,Chalk, & board,	
19/9/18			Relation between inverse trigonometric ratios simple problems	Talk ,Chalk, & board,	
19/9/18			Relation between inverse trigonometric ratios simple problems	Talk ,Chalk, & board,	
20/9/18			Relation between inverse trigonometric ratios simple problems	Talk ,Chalk, & board,	
20/9/18			Relation between inverse trigonometric ratios simple problems	Talk ,Chalk, & board,	
24/9/18		4.2 LIMITS	Definition of limits problems using the following results	Talk ,Chalk, & board,	7
25/9/18			Definition of limits problems using the following results	Talk ,Chalk, & board,	
25/9/18			(I). $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a} = na^{n-1}$ simple problems	Talk ,Chalk, & board,	
26/9/18	(I). $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a} = na^{n-1}$ simple problems		Talk ,Chalk, & board,		
26/9/18	(II). $\lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta} = 1$ simple problems		Talk ,Chalk, & board,		
27/9/18	(II). $\lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta} = 1$ simple problems	Talk ,Chalk, & board,			
27/9/18	(II). $\lim_{\theta \rightarrow 0} \frac{\tan \theta}{\theta} = 1$ simple problems	Talk ,Chalk, & board,			

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28/9/18		4.3 DIFFERENTIATION	Definition- differentiation and formulae	Talk ,Chalk, & board,	8
28/9/18			Simple problems for x^n , $\sin x$, $\cos x$, $\tan x$,	Talk ,Chalk, & board,	
1/10/18			Simple problems for $\operatorname{cosec} x$, $\sec x$, $\cot x$, $\log x$, e^x	Talk ,Chalk, & board,	
1/10/18			Differentiation of $u \pm v$, uv ,	Talk ,Chalk, & board,	
3/10/18			Differentiation of $u \pm v$, uv ,	Talk ,Chalk, & board,	
3/10/18			Differentiation of uvw , $\frac{u}{v}$, simple problems	Talk ,Chalk, & board,	
4/10/18			Differentiation of uvw , $\frac{u}{v}$, simple problems	Talk ,Chalk, & board,	
4/10/18			Differentiation of uvw , $\frac{u}{v}$, simple problems	Talk ,Chalk, & board,	
5/10/18		INTERNAL EXAMINATION-II			
8/10/18	5. DIFFERENTIAL CALCULUS-II	5.1 DIFFERENTIATION METHODS	Differentiation of functions(chain rule) simple problems	Talk ,Chalk, & board,	8
8/10/18			Differentiation of functions(chain rule) simple problems	Talk ,Chalk, & board,	
9/10/18			Inverse trigonometric functions simple problems	Talk ,Chalk, & board,	
9/10/18			Inverse trigonometric functions simple problems	Talk ,Chalk, & board,	
10/10/18			Inverse trigonometric functions simple problems	Talk ,Chalk, & board,	
11/10/18			Inverse trigonometric functions simple problems	Talk ,Chalk, & board,	
11/10/18			Implicit functions of simple problems	Talk ,Chalk, & board,	
12/10/18			Implicit functions of simple problems	Talk ,Chalk, & board,	
15/10/18		5.2 SUCCESSIVE DIFFERENTIATION	Successive differentiation up to second order simple problems	Talk ,Chalk, & board,	7
15/10/18			Successive differentiation up to second order simple problems	Talk ,Chalk, & board,	
16/10/18			Definition of differential equation order & degree simple problems	Talk ,Chalk, & board,	
16/10/18			Definition of differential equation order & degree simple problems	Talk ,Chalk, & board,	
16/10/18			Formation of differential equation simple problems	Talk ,Chalk, & board,	
17/10/18			Formation of differential equation simple problems	Talk ,Chalk, & board,	
17/10/18	Formation of differential equation simple problems	Talk ,Chalk, & board,			

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17/10/18	5. DIFFERENTIAL CALCULUS-II	5.3 PARTIAL DIFFERENTIATION	Definition – partial differentiation of two variables upto second order only simple problems	Talk ,Chalk, & board,	7
22/10/18			Definition – partial differentiation of two variables upto second order only simple problems	Talk ,Chalk, & board,	
22/10/18			Definition – partial differentiation of two variables upto second order only simple problems	Talk ,Chalk, & board,	
22/10/18			Definition – partial differentiation of two variables upto second order only simple problems	Talk ,Chalk, & board,	
23/10/18			Definition – partial differentiation of two variables upto second order only simple problems	Talk ,Chalk, & board,	
23/10/18			Definition – partial differentiation of two variables upto second order only simple problems	Talk ,Chalk, & board,	
23/10/18			Definition – partial differentiation of two variables upto second order only simple problems	Talk ,Chalk, & board,	
24/10/18			Model examination		