

GOVERNMENT POLYTECHNIC, PUNE
(An Autonomous Institute of Govt. of Maharashtra)

Programme	:	Diploma in ET/CE/EE//ME/MT/CM/IT/DDGM
Programme Code	:	01/02/03/04/05/06/07/08/21/22/23/24/26/16/17
Name of Course	:	Applied Mathematics - I
Course Code	:	SC181

Teaching Scheme:

	Hours / Week	Total Hours
Theory	03	48
Term Work /Tutorial	01	16

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests of 60 minutes duration	3 Hrs	--	--	--
Marks	20	80	--	--	--

Course Aim:

The students of Diploma in Engineering and technology must acquire some essential Competencies in Mathematics.

Course Objectives:

The students will be able to think logically and systematically. They will learn the Importance of accuracy and develop attitude of problem solving with diligence and perseverance.

Course Content:

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Chapter No.	Name	Hrs	Marks
1	ALGEBRA	18	32
	1.1 Logarithms: Definition, Laws of Logarithms, Simple examples based on laws.	02	04
	1.2 Determinants: Determinants of second and third orders, solution of simultaneous equations in two and three unknowns (Cramer's Rule), Properties of determinants of order 3 and examples.	03	06
	1.3 Partial fractions: Rational fractions, resolving given rational fraction into partial fraction (Type : Denominator containing non-repeated, repeated linear factors and non repeated quadratic factor)	03	06
	1.4 Matrix Algebra - Definition of a matrix, types of matrices, Equal matrices, Addition, subtraction, multiplication of matrices. Scalar multiple of a matrix. Transpose of a matrix, Singular and Non singular matrix. Adjoint of a square matrix. Inverse of a matrix. Solution of simultaneous linear equations in 3 unknowns by Adjoint method.	06	10
	1.5 Binomial Theorem Definition of factorial notation, definition of permutation and combinations with formula, Binomial theorem for positive index, General term, Binomial theorem for negative index, Approximate value (only formula)	04	06
2.	TRIGONOMETRY	20	32
	2.1 Trigonometric ratios and fundamental identities.	04	08
	2.2 Trigonometric ratios of allied angles, compound angles, Multiple angles (2A, 3A), submultiples angle.	06	08
	2.3 Sum and product formulae.	06	08
	2.4 Inverse Circular functions. (definition and simple problems)	04	08
3.	COORDINATE GEOMETRY	10	16
	3.1 Straight Line Slope and intercept of straight line. Equation of straight line in Slope point form, slope-intercept form, two-point form, two-intercept form, normal form. General equation of line. Angle between two straight lines. Condition of Parallel and Perpendicular lines. Intersection of two lines. Length of perpendicular from a point on the line and perpendicular distance between parallel lines.	06	10
	3.2 Circle Equation of circle in standard form, Centre-radius form, Diameter form, two intercept form. General equation of a circle and its centre & radius.	04	06

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(For Tutorials a batch of 20 students)

Referene Books:

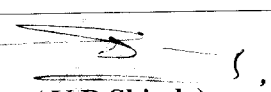

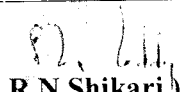
Author	Title	Publisher
Shri S.P. Deshpande	Mathematics for Polytechnic Students	Pune Vidyarthi Griha
Shri S.L. Loney	Plane Trigonometry	Macmillan and London
Shri H.K. Dass	Mathematics for Engineers (Vol.I)	S.Chand and Comp.
Shri Shantinakaran	Engg. Maths Vol.I and II	S. Chand and Comp.

Learning Resources – Chalk, Board etc

Specification Table :

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1.	Algebra	08	16	08	32
2.	Trigonometry	08	16	08	32
3.	Co-ordinate Geometry	04	08	04	16
Total		20	40	20	80

Prepared by :

 (V.B.Shinde)	 (S.V.Chaudhari)	 (R.N.Shikari)
Prepared By	Member Secretary PBOS	Chairman PBOS