

PVCNSSK Govt. Polytechnic Bilaspur
Planning Theory and Coverage Detail

Department : Applied Sciences and Humanities

Branch & Sem. : First Sem.

Session: August 2025- December2025

Subject : **Mathematics -I**

		Course – Elect. Engg. 1 st / Mech. Engg. 1 st			Duration - 14 weeks		
		Theory					
Sr. No.	Period No.	Topics	Details	Instruction Reference	Additional Study Recommended	Remark	
1	1-8	Trigonometry	(i) concepts of angles and measurements of angles in degrees, grades and radians and their conversions	Applied Mathematics-I by S.K.Sharma	Applied Mathematics-I by SS Sabharwal and Sunita Jain,		
	9-18		(ii) T-ratios of allied, multiple & submultiple angles, sum, difference formulae and their applications, product formulae graphs of sinx, cosx, tanx,exp(x)				
2	19-23	Differential Calculus	(i) Definition of function, concept of limits, four standard limits.Differentiation by definition: sinx, cosx, tanx, logx, exp(x).				
	24-29		(ii) differentiation of sum, product and quotient of functions, differentiation of function of a function				
	30-36		(iv) differentiation of trigonometric and inverse trigonometric functions, logarithmic differentiation, exponential differentiation				

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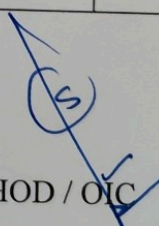
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37-51	Algebra	(i) Complex numbers: Definition, real and Imaginary part of complex number, conjugate, modulus, amplitude, Addition, Subtraction, Multiplication and Division of complex numbers, Polar and Cartesian representation of a complex number and its conversion, De-moivre's theorem and its application. Partial fractions (linear factors, repeated and non-repeated linear factors).			
52-70		(iii) Permutations and combinations, Binomial theorem for positive integral index and any index, first and second binomial approximation with applications.			

Date: 01/08/2025


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