

“PVCNSSK” GOVT. POLYTECHNIC BILASPUR at KALOL

PTSC-7.1

PLANNED THEORY SYLLABUS COVERAGE

GPB		Department: Applied Sciences & Humanities			Subject : Mathematics -I	
SYLLABUS COVERAGE		Sem. & Branch: First & ME/EE			Duration : 3 Years	
		Total Period : 70 Hours		Theory :70 Hrs		Practical : Nil
Sr No	Period Nos	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
Orientation Programme for fresher w.e.f 11-08-2023 to 19-08-2023						
1	(1-5)Hours 3 rd Week, of August. 2023 (6-10)Hrs 4 th Week of August 2023 (11-15)Hrs 5 th Week of August. 2023 (16-20)Hrs	UNIT – I (20 Hours) TRIGONOMETRY	<ul style="list-style-type: none"> • Angles and its Measurement. • Related problems • Trigonometric Ratio of some Allied angles. • Related problems • Addition and Subtraction formulae. • Related problems • Transformation of a product into a sum or a difference and vice-versa. • Related problems • Trigonometric ratios of Multiple and Sub – Multiple angles. • Related problems • Graphs of Trigonometric functions Sin x, Cos x and Tan x.. • Related problems 	Applied Mathematics – I By Eagle Prakashan	Elementry Engineering Mathematics By BS Grewal Engineering Mathematics By Reena Garg	

Sr No	Period Nos	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
2.	1 st week of Sept. 2023 (21-25)Hrs 2 nd week of Sept. 2023 (26-30)Hrs 3 rd week of Sept. 2023 (31-35)Hrs 4 th week of Sept. 2023 (36-40)Hrs	UNIT –II (20 HOURS) DIFFERENTIAL CALCULUS	<ul style="list-style-type: none"> • Function and limits , Definition, concept of Limits. • Four standard limits $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}$ $\lim_{x \rightarrow 0} \frac{a^x - 1}{x}$ $\lim_{x \rightarrow 0} \frac{\sin x}{x}$ $\lim_{x \rightarrow 0} (1 + x)^{\frac{1}{x}}$ <ul style="list-style-type: none"> • Related problems • Differentiation by Definition $(x^n, e^x, a^x \sin x \log x \cos x \text{ \& } \tan x)$ <ul style="list-style-type: none"> • Related problems • Differentiation of sum , product and quotient of function. <ul style="list-style-type: none"> • Related problems • Differentiation of function of function. <ul style="list-style-type: none"> • Related problems • Differentiation of trigonometric and inverse trigonometric functions, <ul style="list-style-type: none"> • Related problems • Differentiation of logarithmic and Exponential functions . Related problems 	Applied Mathematics – I By Eagle Prakashan	Elementry Engineering Mathematics By BS Grewal Engineering Mathematics By Reena Garg	

<p>1st week of Oct.. 2023 (41-45)Hrs</p>	<p>UNIT –III (30 HOURS)</p>	<p>Complex Number:</p> <ul style="list-style-type: none"> • Definition , real and imaginary parts of complex Numbers Power of iota. • Related problems 	<p>Applied Mathematics – I By Eagle Prakashan</p>	<p>Elementry Engineering Mathematics By BS Grewal</p>	
<p>2nd week of Oct. 2023 (46-50)Hrs</p>	<p>ALGEBRA</p>	<ul style="list-style-type: none"> • Conjugate complex Number and properties of conjugate complex numbers • Fundamental operations (Addition, Subtraction Multiplication & Division) of Complex Numbers 		<p>Engineering Mathematics By Reena Garg</p>	
<p>3rd week of Oct 2023 (51-55)Hrs</p>		<ul style="list-style-type: none"> • Related problems • Polar & Cartesian form of Complex Number. 			
<p>4th week of Oct. 2023 (56-60)Hrs</p>		<ul style="list-style-type: none"> • Related problems . • Modulus & Amplitude of Complex Number. 			
<p>1st week of Nov. 2023 (61-65)Hrs</p>		<ul style="list-style-type: none"> • Related problems • De-movier's theorem, its application. • Related problem 			
<p>2nd week of Nov. 2023 (66-70)Hrs</p>		<p>Partial fractions</p> <ul style="list-style-type: none"> • linear factors, • repeated linear factors • RelatedProblems 			
		<p>Permutations & Combinations.</p> <ul style="list-style-type: none"> • Factorial Notation, • Related Problems • Definition of permutation and Combination and its noataion • Value of $P(n,r)$ & $C(n,r)$. 			

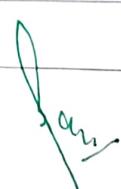
3	2 nd week of Nov 2023 3 rd week of Nov 2023 Revision		<ul style="list-style-type: none"> • Related Problems • Binomial theorem for positive index (expansion and general form which includes). • Term of the expansion & its problems . • Term from the end.& its related problems • Middle terms, and its related problems • Coefficient of the term, and its problems • Constant term, and its related problems • Binomial theorem for any index and applications • Related Problems 			
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Assignments: 8 Marks (4 Marks copy + 4 Marks Viva Voice)

Assignment serial	Assignment given as per Contents of syllabus covered	Proposed date	Actual date	Remarks
A-I	Trigonometry	14/ 08/2023		
A-II	Differential Calculus	15/09/2023		
A-III	Algebra	10/10/2023		

Class Test I & II, : 30 Marks (each) and House Test : 60 Marks

House/Class Test	Contents of syllabus covered	Proposed date	Actual date	Remarks
CT-I	30% of the syllabus	2 nd week of September,		
CT-II	Next 30% of the syllabus	2 nd week of October		
House Test	80% of the syllabus	1 st week of November		

APPROVED	SIGN HOD/OIC
DATE -----	

7.8.23