

<b>Discipline: Civil/Electrical /Mechanical Engg.</b>	<b>Semester: 1<sup>st</sup></b>	<b>Name Of The Teaching Faculty: Suraj Kumar Garada</b>
<b>Subject: Engg. Mathematics I (Th 3)</b>	<b>No. Of Days/Week Class Allotted: 5+1</b>	<b>No. Of Weeks:15 Semester from: 25/10/21 to 31/01/22</b>
<b>Week</b>	<b>Class Day</b>	<b>Theory Topics</b>
1 <sup>st</sup>	1 <sup>st</sup>	<b>Chapter 2: TRIGONOMETRY:</b> Introduction to trigonometry
	2 <sup>nd</sup>	Different types of trigonometric ratios
	3 <sup>rd</sup>	Trigonometric values in different quadrants
	4 <sup>th</sup>	Evaluation of trigonometric values
	5 <sup>th</sup>	Problems related to the above
	6 <sup>th</sup> (Tutorial class)	Revision
2 <sup>nd</sup>	1st	Multiple angles formula for trigonometric functions
	2 <sup>nd</sup>	Compound angles formula for trigonometric functions
	3 <sup>rd</sup>	Sub-multiple angles formula for trigonometric functions
	4 <sup>th</sup>	Problems using the above formulae
		Problems using the above formulae
		Revision
3 <sup>rd</sup>	1 <sup>st</sup>	Solving trigonometric equations
	2 <sup>nd</sup>	Define inverse trigonometric functions
	3 <sup>rd</sup>	Formulae involving inverse trigonometric functions
	4 <sup>th</sup>	Problems related to the above
	5 <sup>th</sup>	Problems related to the above
	6 <sup>th</sup> (Tutorial class)	Revision

4 <sup>th</sup>	1 <sup>st</sup>	<b>Chapter 3: CO-ORDINATE GEOMETRY IN TWO DIMENSIONS (Straight line):</b> Introduction to two dimensional geometry
	2 <sup>nd</sup>	Different types of co-ordinate systems
	3 <sup>rd</sup>	Distance between two points
	4 <sup>th</sup>	Division formula and mid-point formula
	5 <sup>th</sup>	Area of a triangle and collinearity of three points
	6 <sup>th</sup> (Tutorial class)	Revision
5 <sup>th</sup>	1 <sup>st</sup>	Problems related to collinearity and division formula
	2 <sup>nd</sup>	Inclination and slope of a line , angle between two lines
	3 <sup>rd</sup>	Condition of perpendicularity and parallelism between two lines
	4 <sup>th</sup>	Problems related to the above
	5 <sup>th</sup>	Different forms of equations of straight line (slope-intercept form,slope-point form,two-point form)
	6 <sup>th</sup> (Tutorial class)	Revision
6 <sup>th</sup>	1 <sup>st</sup>	Intercept and normal form of equations of straight line
	2 <sup>nd</sup>	Problems related to the above
	3 <sup>rd</sup>	Equation of a line passing through a point and parallel to a line,also perpendicular to a line
	4 <sup>th</sup>	Equation of a line passing through the point of intersection of two lines
	5 <sup>th</sup>	Problems related to the above
	6 <sup>th</sup> (Tutorial class)	Revision
7 <sup>th</sup>	1 <sup>st</sup>	Distance of a point from a line,distance between two parallel lines
	2 <sup>nd</sup>	<b>Chapter 4: CIRCLE:</b> Equation of circle(radius-center form,diameter form)
	3 <sup>rd</sup>	General Equation of circle
	4 <sup>th</sup>	Problems related to the above

	5 <sup>th</sup>	Problems related to the above
	6 <sup>th</sup> (Tutorial class)	Revision
8 <sup>th</sup>	1 <sup>st</sup>	<b>Chapter 1: MATRICES AND DETERMINANTS:</b> Types of matrices
	2 <sup>nd</sup>	Algebra of matrices
	3 <sup>rd</sup>	Multiplication of matrices
	4 <sup>th</sup>	Problems related to the above
	5 <sup>th</sup>	Problems related to the above
	6 <sup>th</sup> (Tutorial class)	Revision
	9 <sup>th</sup>	1 <sup>st</sup>
2 <sup>nd</sup>		Properties of determinant
3 <sup>rd</sup>		Problems related to the above
4 <sup>th</sup>		Problems related to the above
5 <sup>th</sup>		Revision
6 <sup>th</sup> (Tutorial class)		Define Inverse of a matrix
10 <sup>th</sup>		1 <sup>st</sup>
	2 <sup>nd</sup>	Problems to find Inverse of a matrix
	3 <sup>rd</sup>	Problems to find Adjoint and cofactor of matrix
	4 <sup>th</sup>	Properties of adjoint of a matrix
	5 <sup>th</sup>	Problems related to the above
	6 <sup>th</sup> (Tutorial class)	Revision
	11 <sup>th</sup>	1 <sup>st</sup>
2 <sup>nd</sup>		Problems on Cramer's rule
3 <sup>rd</sup>		Find Solution of simultaneous equations by matrix inversion method

	4 <sup>th</sup>	Revision
	5 <sup>th</sup>	<b>Chapter 5: CO-ORDINATE GEOMETRY IN THREE DIMENSIONS:</b> Introduction to three dimensional geometry
	6 <sup>th</sup> (Tutorial class)	Revision
12 <sup>th</sup>	1 <sup>st</sup>	Distance formula ,section formula between points
	2 <sup>nd</sup>	Problems related to the above
	3 <sup>rd</sup>	Direction cosines and direction ratios of a line passing through two points
	4 <sup>th</sup>	Problems related to the above
	5 <sup>th</sup>	Find Angle between two lines if directions cosines or direction ratios of the two lines are given
	6 <sup>th</sup> (Tutorial class)	Revision
13 <sup>th</sup>	1 <sup>st</sup>	Condition of parallelism and perpendicularity between two lines
	2 <sup>nd</sup>	Equation a plane(drs of normal and a point,three point form)
	3 <sup>rd</sup>	Equation a plane(Intercept and normal form)
	4 <sup>th</sup>	General form a plane
	5 <sup>th</sup>	Find Angle between two planes if direction ratios of the two normal to the planes are given
	6 <sup>th</sup> (Tutorial class)	Revision
14 <sup>th</sup>	1 <sup>st</sup>	Find Perpendicular Distance of a point from a plane
	2 <sup>nd</sup>	Problems related to the above
	3 <sup>rd</sup>	Find Equation of a plane passing through a point and parallel to a plane
	4 <sup>th</sup>	Find Equation of a plane passing through a point and perpendicular to a plane
	5 <sup>th</sup>	Problems related to the above
	6 <sup>th</sup> (Tutorial class)	Revision

15<sup>th</sup>

1 <sup>st</sup>	<b>Chapter 6: SPHERE:</b> Equation of sphere(radius-center form)
2 <sup>nd</sup>	Equation of sphere(diameter form)
3 <sup>rd</sup>	General Equation of sphere
4 <sup>th</sup>	Problems related to the above
5 <sup>th</sup>	Revision
6 <sup>th</sup> (Tutorial class)	Revision





