

LESSION PLAN

Discipline: Mechanical Engg.	Semester : 1ST	Name of the Teaching Faculty : JAYANTA KUMAR GHOSH
Subject : Engg. Mathematics-I	Per Week Class allotted :	Semester From Date : To Date :
		No. of Weeks :
Week	Class Day	Theory / Practical Topics
1st	1st	MATRICES AND DETERMINANTS :Definition of matrices , Row, Column, Place value of Elements.
	2nd	Different types matrices :
	3rd	Algebra of Matrices :Additions, Subtraction
	4th	Algebra of Matrices : Multiplication by a Non-Zero Constraint , Multiplication Two Matrices
	5th	Algebra of Matrices : Miner and Co-factor of Matrices
	6th	Tutorial
2nd	1st	Invers of a Matrices (2nd and 3rd order), Transpose of Matrices
	2nd	Solution of learner equation by Matrices invers method
	3rd	Solution of learner equation by Matrices invers method
	4th	Work out the Examples of Addition and Subtraction of Matrices
	5th	Work out the Examples of Multiplication of Matrices
	6th	Tutorial
3rd	1st	DETERMINANTS : Definition , value of Determinant
	2nd	Properties of Determinant
	3rd	Cramer's Rule. Solution of learner equation by Cramer's Rule Method
	4th	Cramer's Rule. Solution of learner equation by Cramer's Rule Method
	5th	Workout the Examples by Determinant method
	6th	Tutorial
4th	1st	Workout the Exercises by Determinant method
	2nd	Workout the Exercises by Matrices method
	3rd	Workout the Exercises by Matrices method
	4th	TRIGONOMETRY : Definition , Trigonometry Ratio, Measurement of Angles
	5th	Trigonometry Ratio: Circular System
	6th	Tutorial
5th	1st	Trigonometry Ratio: Quadrant, Trigonometry Functions
	2nd	Trigonometry Identities : $\sin^2\theta + \cos^2\theta = 1$, $\sec^2\theta - \tan^2\theta = 1$,

		$\operatorname{Cosec}^2\theta - \operatorname{Cot}^2\theta = 1$
	3rd	Workout the Examples
	4th	Sign of Trigonometry Ratio, Trigonometry Ratio of Selected angles
	5th	Trigonometry Ratio of angles $(-\theta)$, $(90 - \theta)$, $(90 + \theta)$ in terms of θ
	6th	Tutorial
6th	1st	Trigonometry Ratio of angles $(180 - \theta)$, $(180 + \theta)$, $(270 - \theta)$, $(270 + \theta)$, $(360 - \theta)$, $(306 + \theta)$ in terms of θ
	2nd	Compound Angles , Multiple Angles
	3rd	Sub-multiple Angles
	4th	Workout Exercises
	5th	Invers Trigonometric function
	6th	Tutorial
7th	1st	Formula of Invers Trigonometric Function
	2nd	Workout the example of Invers Trigonometric Function
	3rd	Workout Exercise of Invers Trigonometric Function
	4th	CO-ORDINATE GEOMETRY IN TWO DIMENSIONS : Introduction , Definition, Axis, Quadrant
	5th	Distance Formula : From Origen , Between two points
	6th	Tutorials
8th	1st	Distance formulae, division formulae, area of a triangle (only formulae no derivation)
	2nd	Define slope of a line, angle between two lines (only F), condition of perpendicularity and parallelism.
	3rd	Different forms of straight lines (only formulae) One point form
	4th	Two point form , Slope form
	5th	Intercept form, Perpendicular form
	6th	Tutorials
9th	1st	Workout the Examples
	2nd	Equation of a line passing through a point and (i) parallel to a line
	3rd	Equation of a line passing through a point and (ii) Perpendicular to a line
	4th	Equation of a line passing through the intersection of two lines
	5th	Distance of a point from a line
	6th	Tutorials
10th	1st	Workout the Exercises of 2D
	2nd	CIRCLE : Locus of a Circle , Different parts of the Circle

	3rd	Equation of a circle Centre radius form
	4th	Equation of a circle General equation of a circle
	5th	Equation of a circle End point of diameter form
	6th	Tutorial
11th	1st	Workout the Examples of Circle
	2nd	Workout the Exercises of the Circle
	3rd	Workout the Exercises of the Circle
	4th	CO-ORDINATE GEOMETRY IN THREE DIMENSIONS : Introduction, Octant
	5th	a) Distance formulae: Distance from Origen , Distance between Two points
	6th	Section formulae and Workout the Examples
12th	1st	Direction ratio, direction cosine
	2nd	Angle between two lines , Workout the Examples
	3rd	Condition of parallelism and perpendicularity)
	4th	Equation of a plane i) General form,
	5th	Equation of a plane Angle between two planes,
	6th	Tutorial
13th	1st	Equation of a plane Perpendicular distance of a point from a plane,
	2nd	Equation of a plane passing through a point and i) parallel to a plane
	3rd	Equation of a plane passing through a point and (ii) perpendicular to a plane
	4th	Workout the Examples
	5th	Workout the Example
	6th	Tutorial
14th	1st	Workout the Example
	2nd	Workout the Exercises
	3rd	Workout the Exercises
	4th	SPHERE : Locus of Sphere, equation of sphere centre at origin
	5th	Equation of Sphere touch the Coordinate Axis
	6th	Tutorial
15th	1st	Equation of a sphere i) center radius form
	2nd	Equation of a sphere ii) general form

	3rd	Equation of a sphere iii) two end points of a diameter form (only formulae and problems)
	4th	Workout the Exercises
	5th	Workout the Exercises
	6th	Tutorials