Lesson Plan

Name : Permal Singh
Discipline : Common to all Branches
Year : 1st Semester
Subject : Applied Mathematics
Code : 180012
Duration : 19-08-25 To 26-11-2025
Work Load : 4 Lectures per week

Week	Lecture per day	Theory Topics
1st	1st	Complex Numbers: definition of complex number
	2nd	Real and imaginary parts of a complex number
	3rd	Polar and Cartesian Form and their inter conversion
	4th	Conjugate of a complex number
2nd	1st	Modulus and amplitude, addition subtraction, multiplication and division of complex numb
	2nd	Logarithms and its basic properties
	3rd	Logarithms and its basic properties
	4th	Revision of Logarithms
3rd	1st	Meaning of npr&ncr (mathematical expression
	2nd	Binomial theorem (without proof) for positive integral index (expansion and general form);
	3rd	Binomial theorem for any index (expansion up to 3 terms - without proof), first binomial approximation with application to engineering problems.
	4th	Revision
4th	1st	Determinants Evaluation of determinants (upto 2ndorder),
	2nd	Definition of Matrices and its types, addition, subtraction and multiplication of matrices (upto 2nd order).
	3rd	Matrices solution of equations (upto 2 unknowns) by Crammer's rule,
	4th	Revision of matrices
5th		1st sessional test
6th	1st	Revision of determinants
	2nd	Trigonometry Concept of angle, measurement of angle in degrees
	3rd	Grades, radians and their conversions.
	4th	T-Ratios of Allied angles (without proof), Sum, Difference formulae and their applications (without proof).
7th	1st	Product formulae (Transformation of product to sum, difference and vice versa
	2nd	Revision and problems
	3rd	Revision and problems
	4th	Applications of Trigonometric terms in engineering problems such as to find an angle of elevation, height, distance etc.

8th	**1st**	Applications of Trigonometric terms in engineering problems such as to find an angle of elevation, height, distance etc.
	2nd	Revision and problems
	3rd	Revision and problems
	4th	Co-ordinate Geometry Cartesian and Polar co-ordinates (two dimensional), Distance between two points,
9th		2nd Sessional Test
10th	**1st**	Midpoint, centroid of vertices of a triangle.
	2nd	Revision and problems
	3rd	Slope of a line, equation of straight line in various standards forms (without proof)
	4th	(slope intercept form, intercept form, one-point form, two-point form, symmetric form, normal form, general form)
11th	**1st**	intersection of two straight lines, concurrency of lines, angle between straight lines
	2nd	Parallel and perpendicular lines, perpendicular distance formula, conversion of general form of equation to the various forms.
	3rd	Revision and problems
	4th	Revision and problems
12th		3rd Sessional Test
13th	**1st**	Circle General equation of a circle and its characteristics.
	2nd	To find the equation of a circle, given: i. Centre and radius ii. Three points lying on it iii. Coordinates of end points of a diameter
	3rd	To find the equation of a circle, given: i. Centre and radius ii. Three points lying on it iii. Coordinates of end points of a diameter
	4th	Revision and problems
14th	**1st**	MATLAB Or SciLab software – Theoretical Introduction,
	2nd	MATLAB or Scilabas Simple Calculator (Addition and subtraction of values
	3rd	Trigonometric and Inverse Trigonometric functions) – General Practice
	4th	Revision and problems
15th	**1st**	Revision and problems of Matlab
	2nd	Revision and problems of Matlab
	3rd	Revision of Straightline
	4th	Revision of circle