Lesson Plan

Name : Ravi Bansal
Discipline : Common for all branches
Semester : 1st
Subject : Applied Mathematics-I
Session : 2022-2023
Work Load : 4 Theory Lectures per week

Lecture No.	Topics
1	Complex Numbers: definition of complex number, real and imaginary parts of a complex number
2	Polar and Cartesian Form and their inter conversion (L-1)
3	Polar and Cartesian Form and their inter conversion (L-2)
4	Conjugate and modulus of complex numbers
5	Amplitude of complex numbers
6	Addition, subtraction and multiplication of complex numbers
7	Division of complex numbers
8	Logarithms and its basic properties (L-1)
9	Logarithms and its basic properties (L-2)
10	Logarithms and its basic properties (L-3)
11	Meaning of ${}^{n}P_{r}$ & ${}^{n}C_{r}$ (mathematical expression)
12	Binomial theorem (without proof) for positive integral index (expansion and general form) (L-1)
13	Binomial theorem (without proof) for positive integral index (expansion and general form) (L-2)
14	Binomial theorem for any index (expansion up to 3 terms - without proof) (L-1)
15	Binomial theorem for any index (expansion up to 3 terms - without proof) (L-2)
16	First binomial approximation with application to engineering problems
17	Determinants and Matrices – Evaluation of determinants (upto 2nd order)
18	Solution of linear equations (upto 2 unknowns) by Crammer's rule
19	Definition of Matrices and its types
20	Addition, subtraction and multiplication of matrices (upto 2nd order).
21	Concept of angle, measurement of angles in degrees, grades, radians and their conversions (L-1)
22	Concept of angle, measurement of angle in degrees, grades, radians and their conversions (L-2)
23	Concept of angle, measurement of angle in degrees, grades, radians and their conversions (L-3)
24	T-Ratios of Allied angles (without proof), Sum, Difference formulae and their applications (without proof) (L-1)
25	T-Ratios of Allied angles (without proof), Sum, Difference formulae and their applications (without proof) (L-2)
26	Product formulae (Transformation of product to sum, difference and vice versa) (L-1)
27	Product formulae (Transformation of product to sum, difference and vice versa) (L-2)

28	Applications of Trigonometric terms in engineering problems such as to find an angle of elevation, height, distance etc. (L-1)
29	Applications of Trigonometric terms in engineering problems such as to find an angle of elevation, height, distance etc. (L-2)
30	Applications of Trigonometric terms in engineering problems such as to find an angle of elevation, height, distance etc. (L-3)
31	Cartesian and Polar co-ordinates of points (two dimensional)
32	Distance and mid-point between two points
33	Centroid of a triangle with given vertices, Slope of a Straight line
34	Equation of straight line in various standards forms (without proof); (slope intercept form, intercept form, one-point form, two-point form, symmetric form, normal form, general form) (L-1)
35	Equation of straight line in various standards forms (without proof); (slope intercept form, intercept form, one-point form, two-point form, symmetric form, normal form, general form) (L-2)
36	Equation of straight line in various standards forms (without proof); (slope intercept form, intercept form, one-point form, two-point form, symmetric form, normal form, general form) (L-3)
37	Intersection of two straight lines, concurrency of lines
38	Angle between straight lines
39	Parallel and perpendicular lines, perpendicular distance formula
40	Conversion of general form of equation to the various forms.
41	General equation of a circle and its characteristics.
42	To find the equation of a circle when Centre and radius are given
43	To find the equation of a circle when three points lying on it
44	To find the equation of a circle when Coordinates of end points of a diameter are given (L-1)
45	To find the equation of a circle when Coordinates of end points of a diameter are given (L-2)
46	**MATLAB Or SciLab software –** Theoretical Introduction (L-1)
47	**MATLAB Or SciLab software –** Theoretical Introduction (L-2)
48	MATLAB or Scilab as Simple Calculator (Addition and subtraction of values – Trigonometric and Inverse Trigonometric functions) – General Practice (L-1)
49	MATLAB or Scilab as Simple Calculator (Addition and subtraction of values – Trigonometric and Inverse Trigonometric functions) – General Practice (L-2)
50	MATLAB or Scilab as Simple Calculator (Addition and subtraction of values – Trigonometric and Inverse Trigonometric functions) – General Practice (L-3)

Note: Class Test and Sessional Exam will be given as per Academic Calendar.