LESSON PLAN

Name of Faculty : Ravish

Discipline : Applied Science

Semester : 1st

Subject : Applied Mathematics

Lesson Plan Duration : August 2024 to November 2024

Work load (Lecture) per week (in hours): Lectures—04

APPLIED MATHEMATICS (220012)		
week	**Lecture day**	**Theory**
1st	**1**	**Complex numbers: definition of complex number, real and imaginary parts of a complex number**
	2	**Polar and Cartesian Form and their inter conversion**
	3	**Conjugate of a complex number, modulus and amplitude**
	4	**Students will discuss mutually last three days class work**
2nd	**5**	**Addition, subtraction of complex number**
	6	**Multiplication and division of complex number**
	7	**Logarithms and its basic properties**
	8	**Students will discuss mutually last three days class work**
3rd	**9**	**Assignment 1**
	10	**Logarithms and its related questions.**
	11	**Permutation, combination formula and definition**
	12	**Students will discuss mutually last three days class work**
4th	**13**	**Meaning and values of ${}^nP_r$ and ${}^nC_r$and simple problems**
	14	**Binomial theorem for positive integral index , General terms, simple problems**
	15	**Binomial theorem for positive integral index , General terms, simple problems**
	16	**Students will discuss mutually last three days class work**
5th	**17**	**Sessional test 1**
	18	**Determinants and Matrices – Evaluation of determinants (up to 3 order)**
	19	**Solution of equations (up to 2 unknowns) by Cramer's Rule**
	20	**Students will discuss mutually last three days class work**
6th	**21**	**Definition of Matrices and its types**
	22	**Addition and subtraction of Matrices (up to 2 order)**
	23	**Multiplication of matrices (up to 2 order)**
	24	**Students will discuss mutually last three days class work**
7th	**25**	**Assignment 2**
	26	**Concept of angle: measurement of angle in degrees, grades, radians and their conversions**
	27	**Concept of angle: measurement of angle in degrees, grades, radians and their**

		conversions
	28	**Students will discuss mutually last three days class work)**
8th	**29**	**T-Ratios of standard angle and fundamental Identities, Allied angles (without proof)**
	30	**Sum, Difference formulae and their applications (without proof).**
	31	**Product formulae (Transformation of product to sum, difference and vice versa)**
	32	**Students will discuss mutually last three days class workApplications of**
9th	**33**	**Application of Trigonometric terms in engineering problems such as to find an angle of elevation, height, distance etc.**
	34	**Sessional test 2**
	35	**Point: Distance Formula, Mid-Point Formula**
	36	**Students will discuss mutually last three days class work**
10th	**37**	**Centroid of triangle**
	38	**Straight line: Slope of a line, equation of straight line in various standards forms (without proof)**
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	40	**Students will discuss mutually last three days class work**
11th	**41**	**Intersection of two straight lines, concurrency of lines**
	42	**Angle between two straight lines, parallel and perpendicular distance formula**
	43	**Conversion of general form of equation to the various forms.**
	44	**Students will discuss mutually last three days class work**
12th	**45**	**Circle: General equation of a circle and identification of centre and radius of circle.**
	46	**To find the equation of a circle: given Centre and radius,** **To find the equation of a circle: three points lying on it**
	47	**Coordinates of end points of a diameter.**
	48	**Students will discuss mutually last three days class work**
13th	**49**	**Introduction to Sci Lab, what is SciLab, how to install and what we do with SciLab**
	50	**SciLab as a simple calculator**
	51	**Basic Mathematics functions and logical operators in SciLab**
	52	**Trigonometric functions (sin, cos, tan, cot functions)**