

Pre-Content/content Post-Content	Learning outcomes/Objectives	
	General	Specific
<u>Pre-Content</u> Definition and Concept of $m \times n$ matrix and types of matrices notation, order, equality, zero and identity matrix algebra of matrices Addition and multiplication and multiplication with a scalar and its properties of addition, non- commutativity of multiplication of matrices existence of non-zero matrices whose product is the zero matrix transpose of a matrix, symmetric and skew symmetric matrices. Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists	Students will be able to familiarize with various types of matrices develop skills in applying operations on matrices perform operation on matrices explore the non-zero matrices whose product is the zero matrix identify transpose of a matrix, symmetric and skew symmetric matrices appreciate the need to find the inverse of a matrix foster creative and independent thinking	Students will be able to familiarize with matrix of different order $m \times n$, understand various type of matrices choose and apply appropriate property to prove matrix identities perform operation like addition, subtraction of matrices Inspect the order of matrices before multiplying them identify and give examples of non-zero matrices whose product is zero matrix identify and give examples of square, symmetric, skew symmetric matrices etc select relevant operation to find the inverse of the matrices Inverse by elementary transformation method .

Home Work /Assignments

1. Work Exercise From the NCERT
2. Extra Practice Assignment from The Exemplar

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
Teacher will cite various examples to enable students distinguish between various types of matrices. explain various types of matrices perform matrix multiplication facilitate students to solve explain symmetric and skew symmetric matrix and write and show teach easy method to find inverse by elementary transformation discuss HOTS questions	Students will get involved in thinking process and will share their ideas solve Questions from EX 3.1 follow the instructions and do the questions given in the exercise Solve Questions from EX 3.2 appreciate the properties and will be able to justify them with the help of examples solve Questions from Ex3.3 Express a square matrix as sum of symmetric and skew symmetric matrix describe and justify the operations and solve problems based on them Solve Questions from Ex 3.4 Solve Questions from misc. Ex	Teacher will write observation and remarks after the class

Teaching Aids- ncert publication, Exemplar problem

Methodology/Innovative Methods Use of Smart board reinforcement method.

Interdisciplinary Links: Used in genetics, Economics, Sociology and modern psychology

Coordinator

Vice-Principal

Principal