

SCHOOL OF APPLIED SCIENCE & HUMANITIES
DEPARTMENT OF MATHEMATICS

Subject : Linear Algebra

Subject Code : 25MT103

Sem. : I

Academic Year : 2025-2026

Section : 14

Regulation : R25

Module 1 - T5 - Assignment 2

1. Define reduced row echelon form of a matrix.
2. Answer the following.
 - a. What are the elementary row and column operations?
 - b. Can any matrix be reduced to a row-echelon form through a finite sequence of these operations?
 - c. Represent three elementary row operations as the multiplication of matrices.
3. Consider the following system of linear equations
$$x + 2y + z = 2$$
$$2x - 2y + 3z = 1$$
$$x + 2y - z = 1$$
 - a. Solve the system of equations using the Gauss-Jordan method.
 - b. Calculate the rank of the coefficient matrix.