

SCHOOL OF APPLIED SCIENCE & HUMANITIES  
DEPARTMENT OF MATHEMATICS

Subject : Linear Algebra

Subject Code : 25MT103

Sem. : I

Academic Year : 2025-2026

Section : 21

Regulation : R25

**Module 1 - T5 - Assignment 3**

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1. Compute LU (Doolittle) for  $A = \begin{pmatrix} 2 & -1 & 1 \\ 4 & 1 & -1 \\ -2 & 2 & 3 \end{pmatrix}$  and solve  $Ax = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$ .

2. Use Gauss--Jordan to find RREF and solution for:

$$2x + 4y - 2z = 2$$

$$-x - y + z = -1$$

$$x + 2y + 3z = 6$$

3. Determine consistency and solve if possible:

$$x + y + z = 2$$

$$2x + 2y + 2z = 4$$