University of Central Punjab

Faculty of Information Technology

and Computer Science

FALL 2024

Course Title: LINEAR ALGEBRA

Course Code: SESS2743

Submission Date 7 November

Assignment 1

Name: _____

Registration Number: _____

Section: _____

CLO #	Course Learning Outcome (CLO)	Taxonomy Level	Mapping to PLO
CLO 1	Students will be able to **apply** linear equations to model real-world problems and solve them using appropriate methods and derive matrices representing linear transformation.	**C3**	**PLO 2**

Submission Instructions ***(Please follow strictly)***

Assignment is h**andwritten.** It is **NOT TYPES IN WORD or any text editor**.

The Assignment is written on plain A4 size pages and stapled properly. (Do not submit in paper files).

All questions and pages are in order .

Follow the deadline. Finish your work one day before, so you could submit in time.

Late submission will result in 10% deduction in marks.

No request for late submissions will be considered after two working days of the deadline.

Question#1 Solve the system of Linear equations by **Applying** Gauss-Elimination Method.

$$\begin{aligned} x + y + z &= 1 \\ 3x - y - z &= 4 \\ x + 5y + 5z &= -1 \end{aligned}$$

A. Convert the system into Augmented Matrix.
B. Apply suitable Row operations to convert the matrix in Echelon form.
C. Also check the system is consistent or inconsistent.

Question#2 Apply Gauss-Jordan Method to given problem below and find solution of system.

A tech company produces three different products: laptops, tablets, and smart phones. The company has the following information about its production:

1. It takes 3 hours to assemble a laptop, 2 hours to assemble a tablet, and 1 hour to assemble a smart phone.
2. The company has a total of 120 hours available for assembly in a week.
3. The company also needs to produce at least 10 laptops, 15 tablets, and 20 smart phones to meet customer demand.

First convert the given word problem to system of linear equations then find the solution.